LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued.

Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

Canvas Products

Ice cream shippers, cream jackets, tub covers, waterproof covers and aprons are illustrated in a small folder sent out by Canvass Products Corp., 19 E. McWilliam St., Fond du Lac, Wis.

Hill

An ice cream display case, that maintains below zero temperature and does not frost the glass, is shown in a folder distributed by C. V. Hill Co., Inc., Trenton, N. J. This case is made in 3, 4, 5 and 6 ft. lengths. Construction is of metal, trimmed in monel metal, and four layers of one-inch corkboard, supported by two-and-one-half-inch layers of truss board insulate the case.

Korfund

The first issue of "Isolation," a quarterly publication, devoted to the study of materials, scientific, practical and economical application of methods for deadening and eliminating vibration and noise, has been published by Korfund Co., Inc., manufacturers of soundproofing materials, 235 E. 42nd St., New York, N. Y.

Manning

A mechanical ice cream cabinet, using a Universal Cooler compressor, is offered by Manning Mfg. Co., Rutland, Vt. This unit, which is described and illustrated in a small booklet, has a ball and roller bearing crankshaft, thermostat control, an expansion valve accessible from the outside, a filter trap and a removable cylinder sleeve. Two-hole cabinets use a single compressor, while cabinets having more than two holes use a twin compressor.

McCord

A catalog issued by McCord Radiator & Mfg. Co., Detroit, Mich., shows McCord general type condensers used in refrigerators and ice cream cabinets. Single, double and triple row spiral fin models are designed to handle condensing requirements of any compressor in the small household or commercial machine field.

Universal Cooler

Apartment house refrigerators, milk coolers, and ice cream cabinets are illustrated and described in folders distributed by Universal Cooler Co., Ltd., Windsor, Ontario, Canada. The apartment line includes units for use in both large and small rooms. The milk coolers contain sweet water maintained at 34° F. This water bath reaches the shoulder of milk cans and there is a solid ice formation of from 300 to 600 lbs. in the bottom of cooler, which cools milk to 50° in one hour. Ice cream cabinets have either two or three holes, their compressors being equipped with ¼-h. p. units.

Roaming Ransiers Adapt Refrigeration to Touring

MR. AND MRS. H. E. RANSIER, Manlius, N. Y., tourists, are still roaming U. S. highways after 22 months of continuous travel, during which time they have covered nearly 30,000 miles.

These travelers solved the refrigeration problem by building a refrigerator inside their trailer, installing Copeland cooling and condensing units on a skeleton framework outside the trailer. Power is supplied by one of the trailer's wheels, from which a belt runs to the condenser. A throw-out clutch stops the power when refrigeration is completed. When long camp-ground halts are made, a rear wheel of the car is jacked up, a hub pulley is attached and belted to the condensing unit. The motor "idles" until enough refrigeration for a 24-hour period is supplied.

REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, referring to the query number.

Jones Electric Refrigerator

Query No. 297—"We would greatly appreciate it if you would inform us the name and address of the manufacturers of an electric refrigerator called the 'Jones'."

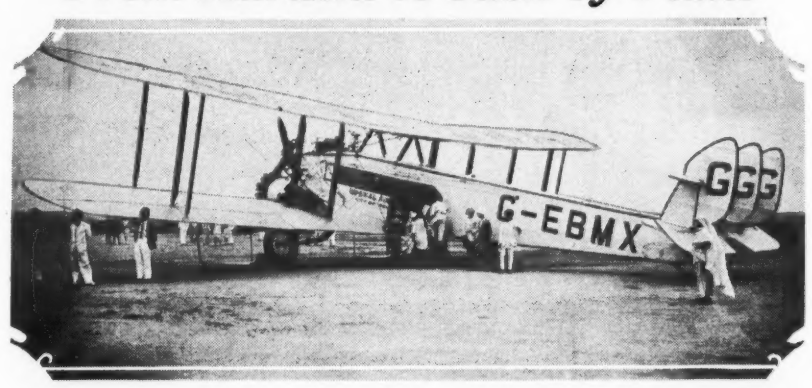
Electric Ice Cream Freezer

Query No. 298—"Kindly advise if you can furnish us with the name and address of a manufacturer who is building an ice cream freezer suitable for making ice cream without using ice and which freezer is fitted with cord and socket so as to derive power from the lighting circuit."

Uncongealable Oil for Refrigerating Machines

Query No. 299—"Who supplies special uncongealable oil for refrigerating machines, namely, Frigidaire, Kelvinator and others?"

From Karachi to Jask by Plane



The Export Division of the Kelvinator Corp. has just received a communication from Jost's Engineering Company, distributors at Bombay, India, telling of the shipment of a Kelvinator from Karachi to Jask, in Persia, by their sub-agents, Forbes, Forbes, Campbell & Co., located at Karachi. The picture shows the Kelvinator being loaded into the airship.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance — Positions Wanted — fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

POSITIONS AVAILABLE

REFRIGERATION ENGINEER—Must be technical graduate, experienced with non-ammonia refrigerants and competent to conduct volumetric efficiency, calorimeter, motor load and other tests. State experience and salary required. Also if prefer permanent or temporary consultant position. All information confidential. Box 207.

Salesman wanted to sell full line of cooling rooms, refrigerators and white porcelain freezer cases for electric refrigeration. Write or wire for territory, Gaus Manufacturing Co., Inc., Main and Clinton Sts., St. Louis, Mo.

Experienced soda fountain salesman wanted at once. Write full information, giving sales record reference. Box 211.

SALES MANAGER—In wealthy suburban New York territory to build up distributor sales force. Man qualifying will be given unlimited power and paid on basis of his accomplishment. Only man willing to work on commission basis will be accepted. Write full information of yourself, giving sales record, experience, reference, etc. Box 199.

POSITIONS WANTED

CHIEF ENGINEER AVAILABLE—Ten years' experience in electric refrigeration with leading manufacturers in charge of engineering design and production methods. Wishes to communicate with manufacturer east of St. Louis. Box No. 180.

Chief Engineer, with ten years' electric refrigeration design, development and production experience, wishes to get in touch with a manufacturer. Box 203.

MISCELLANEOUS

ENGINEERING: Domestic and small commercial compressors and refrigerating equipment designing service. Developers of your ideas with strict protection to you. Years of successful record. All correspondence strictly confidential. Address, Box 204.

FOR SALE—One thousand thermo-electric switches, maximum approved rating AC, one hundred fifteen V6 ampere DC, one hundred fifteen V4 ampere, manufactured by Bishop and Babcock. All new, unused, perfect condition. Will accept any reasonable offer for entire lot. Account, discontinued electric refrigeration production. Box 209.

SUPERIOR REFRIGERATOR CASTINGS

FLINT FOUNDRY COMPANY

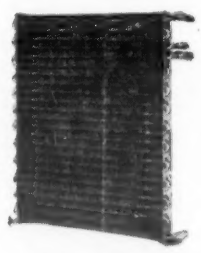
Division of
General Foundry & Machine Company

FLINT, MICH. MARSHALL, MICH.

COPELAND PRODUCTS, INC. has very definite plans for the expansion of its field sales organization for 1930 and will be glad to receive applications from young men who are equipped to handle household sales, commercial sales applications and are thoroughly acquainted with refrigeration from the standpoint of installation and service. Applicants selected will be thoroughly trained at the Copeland factory before going out into the territory. Remuneration will be salary and traveling expenses with excellent opportunity for advancement. Address Box 210 Electric Refrigeration News.

FLINTLOCK CONDENSERS

Full Capacity



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FLINTLOCK CORPORATION

4461 W. Jefferson Ave.
DETROIT, MICH.

Subscription Order

ELECTRIC REFRIGERATION NEWS,
550 MACCABEES BUILDING, DETROIT, MICH.

Please enter subscription to Electric Refrigeration News.

United States and Possessions:
☐ $2.00 per year. ☐ Three years for $5.00

All other Countries:
☐ $2.25 per year. ☐ Two years for $4.00

I am enclosing payment in the form of
☐ Check ☐ P. O. Order ☐ Cash

Name.....

Street Address.....

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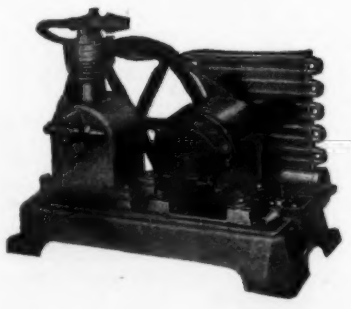
Simplicity, quality, efficiency and capacity unequaled. A size for every use.

WITH THESE ARE AFFORDED

POLICIES AND PRICES FOR COMMON SENSE MERCHANDISING

Resulting in Larger Business and Larger Profits to Every One of Our Connections



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Suitable To Every Requirement
Commercial Multiple and Domestic

Write us for Details

KULAIR CORPORATION
PHILADELPHIA, PA.

ELECTRIC REFRIGERATION NEWS

The business newspaper of the refrigeration industry

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QUICK FREEZING TO REVOLUTIONIZE FOOD HABITS OF COUNTRY

S. C. Bloom Tells A. S. R. E. About New Process

Detroit, Mich.—"Quick freezing of meats took the meat packers by storm at the recent meeting of the American Institute of Meat Packers held in Chicago," said S. C. Bloom at the opening of a most interesting and enlightening address before the Detroit Section of the American Society of Refrigerating Engineers, Monday evening, November 18. "It was the keynote of the meeting, whereas, a year ago, the subject was scarcely mentioned by the speakers before that organization."

Mr. Bloom, of S. C. Bloom & Co., 53 W. Jackson Blvd., Chicago, is one of the leading exponents of the quick-freezing process, and has collected an amazing array of statistics to show the great economies which will be gained by the development of this new method of producing, storing, transporting, and retailing food products. He estimates that the process will result in a reduction of 2½ cents per pound in the nation's meat bill, and will, at the same time, give the housewife a superior quality of graded meat in convenient package form.

According to Mr. Bloom, eighteen billion pounds of edible meat was produced in the United States last year on which the packers realized an average of 18 cents per pound. Allowing for the retailers' mark up of 25 per cent, the consumers' meat bill totaled approximately four billion dollars. He figures that 8½ per cent of the sales value can be saved by eliminating the meat cutter in the retail store, thus reducing the selling expense $320,000,000 annually.

Explaining the quick-freezing process in its effect upon meat, he said that when freezing is slow, large ice crystals form and rupture the cells, thus allowing the juices to flow out when the meat is thawed. This results in a loss in weight as well as in flavor and appearance. In quick-freezing the cells are not harmed, and when the meat is thawed it has the same texture, appearance and taste as the fresh product. He pointed out, however, that satisfactory results have not yet been secured with vegetables, although all kinds of fruits and fruit juices are being frozen successfully.

By means of the quick freezing process, deterioration is suspended and meat so frozen may be kept indefinitely. The packer will therefore be able to store his product and this will tend to stabilize the price. In the past the packer has had no control over the number of animals which come into the market. It has been the practice to accept all that are offered and then to dispose of the dressed meat at any price it will bring. This condition naturally results in wide fluctuations in price.

There has also been a large amount of waste at the butcher's block. With the new process, all cutting will be done by the packer, and the trimmings will be efficiently used for by-products.

Experiments have shown that a fifty-pound package of frozen meat will last seven days in summer temperatures. Insulated containers are used, which exclude air and moisture, and the frozen meat provides its own refrigeration. It will not even be necessary to ice or precool the cars.

Recommends Temperature for Display Cases

Mr. Bloom said that the packers have been besieged by manufacturers of display cases, who want to know what temperature will be required. The pack-

(Concluded on Page 4, Column 4)

BAKER ICE MACHINE CO. AT PEAK PRODUCTION

Omaha, Nebr.—According to C. A. Baker, vice-president of the Baker Ice Machine Co., more men are now employed at the factory on a day shift basis than during any year since the company was organized in 1905. The increase in the number of machinists, welders, helpers, drill press operators, erecting engineers and laborers employed over last year is 21 per cent. This is in spite of the fact that an all-time record for number of installations was established during the fiscal year which ended July 1, when the increase was 41 per cent over the previous year.

At the present time the company is planning to embark upon one of the largest production schedules ever attempted.

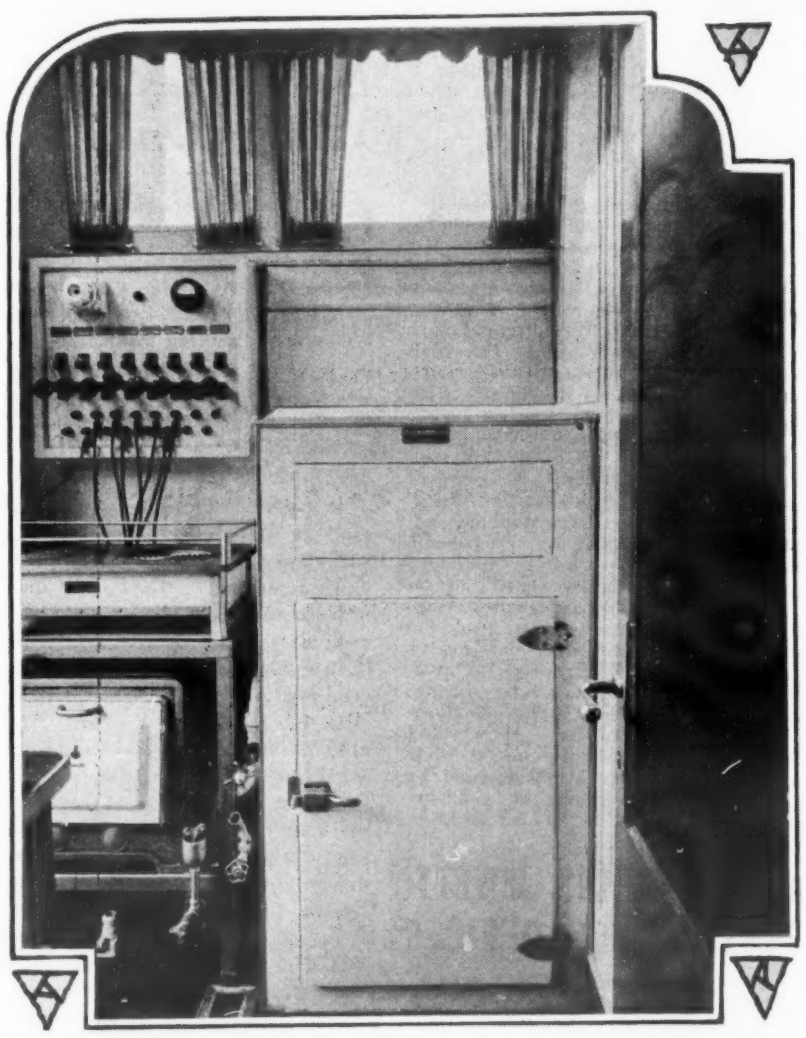
German "Week End Wagon" Has Frigidaire

A LUXURIOUS new type of "touring apartment" has recently appeared in Berlin. It consists of three furnished rooms on a gasoline truck chassis and will accommodate six persons in addition to cook and chauffeur.

One of the features is a completely equipped electrical kitchen hooked up with the 800-watt batteries carried by the car. The kitchen is a model of Pullman compactness but provides a full-sized T-5 model Frigidaire with five cubic foot food capacity and double freezing trays producing thirty-six ice cubes. This Frigidaire model, with compressor on top, is almost unknown today in America. It has a 1/6 hp. motor and is air-cooled.

The Week-end Wagon, as its name applies, was built for pleasure trips along the fine roads leading out from Berlin and Potsdam, but was quickly adopted for more practical purposes. Two cars were built for a motion picture company to use on location, the director and stars being housed more comfortably this way than in neighboring country inns. And another order has since been filled for the chief engineer and his immediate staff at work on a bridge construction job far away in the interior.

The lounge section of the car is quite as luxurious as a club, and with plenty of chilled bottles on hand, the illusion is quite complete!



DEPT. OF AGRICULTURE FLOODED WITH INQUIRIES ON FOOD PRESERVATION

Washington, D. C.—During the National Food Preservation essay contest in September, the United States Department of Agriculture was flooded with inquiries regarding the fundamentals of food spoilage and the relation of refrigeration to food preservation, according to Lawrence H. James, bacteriologist of the Food Research Division, Bureau of Chemistry and Soils.

Letters were received from individuals as well as business organizations who were interested not only in the essay contest but who also were stimulated by the campaign to seek authoritative information on the subject. At times the letters arrived in such numbers that it was impossible for the Bureau to give all of the information requested. All of the letters were individually answered, however, and the best possible information was given to suit each particular inquiry. Stress was laid on the principles of food preservation.

Farmers' Bulletin No. 1374, entitled, "Care of Food in the Home," was forwarded along with other information in many cases. This Bulletin contains data on the causes of decomposition of food products and general directions for the refrigeration of food in the home.

Directory

Manufacturers of Parts, Accessories and Materials Listed

ON pages 22 and 23 of this issue will be found a special directory listing sources of supply for parts, accessories and materials used in electric refrigeration systems.

In the previous issue, Nov. 6, there was a similar listing of domestic and commercial refrigerator cabinet manufacturers.

The next issue, Dec. 4, will carry a special directory of refrigerating machine builders, giving specifications of the units.

Equipment and tools for production and service will be featured Dec. 18, and a complete list of all classifications will appear in the Annual Catalogue and Directory Number Jan. 1, 1930.

ELECTROLUX TO EXPEND ONE MILLION DOLLARS FOR 1930 ADVERTISING

Evansville, Ind.—Climaxed with a banquet, at which time prizes were given to field representatives for the best performances of the year, the three-day sessions of the Second Annual Electrolux Sales Convention came to a close on Wednesday, November 13. This convention assembled for the first time some 65 salesmen, New York administrative executives, and Evansville department heads, of the Electrolux Gas Refrigerator Division, Servel Sales, Inc.

Highlights of the business sessions were the announcements by H. W. Foulds, vice-president in charge of distribution, that over one million dollars would be spent during 1930 on Electrolux advertising alone; that production of Electrolux gas refrigerators for next year would be more than doubled; and that the current sales for 1929 had exceeded previous distribution by over 100 per cent.

According to Mr. Foulds, presiding chairman of the convention, the market for gas refrigeration has barely been scratched. He cited as examples the astonishing sales records hung up in the Metropolitan New York area, where over 20,000 refrigerators had been sold in nine months.

"We can certainly look forward to next year with enthusiasm," said Mr. Foulds. "In entering the new year we find every key city in the country covered with a distributor. We have the solid support of the gas industry. With the exception of occasional combination companies, I do not think there is a merchandising gas company that is not selling Electrolux or giving us friendly support. This, in itself, is an enormous step forward as compared with the beginning of 1929.

"A comprehensive radio program is now being developed, and it appears that it will be in actual operation shortly after the first of the year. We are also bringing out a new and popular model, known as the EL-3-A, which will be of the general proportions of the

(Concluded on Page 15, Column 2)

STEWART NOW GENERAL MANAGER OF McCRAY CO.

Kendallville, Ind.—H. M. Stewart, vice-president of McCray Refrigerator Sales Corp., was appointed General Manager of that concern, Oct. 17. Mr. Stewart now has direct supervision over all departments of McCray business, with which he has been associated for more than 25 years.

The McCray organization has also made other changes since Oct. 17. J. T. Wassell has been appointed manager over the entire sales department, which has been separated into two divisions, Agency and Branch Store, in order to facilitate handling of sales at the factory.

Directly under Mr. Wassell in the Agency division are R. J. Misselhorn and J. H. Gant, who have charge of eastern sales. Western sales are under M. A. Drumheller and W. H. Reichardt.

Branch Store division is in charge of T. J. Murphy. Other men in this department are V. C. Knight, W. R. Hawkins, D. W. Bigelow and R. D. Dillon.

The Special Built-to-Order department remains in charge of H. E. Culbertson, whereas the work in the Chain Store division is now handled by C. H. Ziebell and G. F. Shoup.

KELVINATOR OFFERS 12 NEW MODELS FOR 1930, NEW FEATURES

Ice-O-Thermic Tubes for Quick Freezing Work Automatically

Detroit, Mich.—Ice-O-Thermic tubes, which give automatic quick freezing, are the outstanding development in Kelvinator's 1930 line of electric refrigerators, which will be announced to the public Friday evening, November 22, over a nation-wide hook-up of forty radio stations.

The new line will be simultaneously shown throughout the country Saturday, November 23, and will include domestic refrigerators, commercial units, water coolers, cross fin coils and ice cream cabinets. This equipment was given an advance showing to 600 representatives of the corporation at the Distributors' Convention, held in the Book-Cadillac Hotel November 8 and 9.

The Ice-O-Thermic tubes automatically concentrate the entire refrigerating force of the unit in the coils, which completely surround the bottom ice tray. The tubes function for quick freezing of ice cubes and desserts without affecting temperatures in the other compartments of the cabinet. They automatically change the temperature as the freezing load is increased or decreased and the compressor automatically ceases to work when the freezing is completed.

National magazines and trade journals, newspapers, outdoor posters, direct mail and window displays will carry large advertisements of the new Kelvinator line; a double-page spread will appear in November 23 issue of *Saturday Evening Post*.

A DeLuxe group of five models, a Standard group of four models, and a Utility group of three comprise the 1930 domestic line. All 12 of these units are equipped with Ice-O-Thermic tubes. These cabinet models are of new design, massive in appearance and constructed with heavy doors. Hardware is worked out in a tasteful, modernistic style. The cabinets are well-proportioned, having a convenient height that makes for accessibility. All porcelain panels are separated by rubber trim strips, which blend harmoniously with the design and at the same time protect the porcelain. Latches are trigger type and provision is made for locking. Rubber ice trays, which proved popular with the old models, will again be a part of new line equipment.

The DeLuxe cabinets are offered in five sizes, their exteriors are of white

(Continued on Page 14, Column 5)

CHICAGO COMPARES CODE SPONSORED BY A. S. R. E. WITH GEARON ORDINANCE

Kegel Publishes Summary of Evidence and Argument, Essington Replies

Chicago, Ill.—Another meeting of the Health Committee of the Chicago City Council held Monday, November 18, was taken up largely by discussions between heads of the Health and the Boiler Inspection Departments as to the qualifications of each to inspect refrigerating systems and handle the problems which would arise after the adoption of an ordinance.

Dr. Arnold H. Kegel, health commissioner, pointed out that his department has twenty-one engineers who are experienced in refrigeration problems. Gerald Gearon, of the Boiler Inspection Department, argued that his department has handled refrigeration in the past and should continue to do so.

George B. Bright presented the revised code sponsored by the American Society of Refrigerating Engineers, and stated that this code, with a very few changes, would be acceptable to twenty-four out of the twenty-seven national bodies represented in the American Standards' Committee. He urged that the Chicago Health Committee use the A. S. R. E. code as a basis for the Chicago ordinance, and thereby establish a precedent for other cities to follow. Alderman Terrance F. Moran, chairman of the Council Health Committee, asked Health Commissioner Kegel if he would accept the national code. Dr. Kegel agreed that it was acceptable in principle and that with slight changes could be agreed upon in Chicago. Mr. Gearon opposed the national code on the ground that it is not yet officially adopted. He

(Concluded on Page 19, Column 2)

MORRIS WINS ENAMELING FELLOWSHIP

Cleveland, Ohio—Thomas Morris is now working under the Cushman Research Fellowship at Western Reserve University here. He succeeds Royal Bryant, who is now studying under a Rhodes Scholarship at Oxford. The Cushman Research Fellowship was founded several years ago by H. D. Cushman, president, Ferro Enameling Co., Cleveland, for the investigation of fundamental chemical reactions of vitreous (silicate) enamels. Previous to receiving the Fellowship, Mr. Morris was chemist for Brown Company, of Berlin, N. H. He is a graduate of Brown University.

Bigger and Better Things ahead for Copeland

The ambitions of many years have been realized—the long-time labors of an extremely conscientious group of master workmen have borne fruit—

—Copeland has purchased and is already occupying a brand new factory, its fourth in the last five years! Manufacturing facilities are now such as to enable Copeland to keep pace with the ever-increasing demand for Copeland products all over the country.

Expect bigger and better things of Copeland, for Copeland possesses, in even greater measure than before, the essentials of greater success—(1) superior merchandise, (2) a complete line of models which answers every requirement in the fields of household and commercial refrigeration, (3) a range of prices with which every buyer can be satisfied, and (4) the facilities to handle an increasing volume of business.

Copeland is looking for men—distributors and dealers—who are big enough to participate in Copeland's success. An exchange of information will be mutually helpful and is invited.

COPELAND SALES COMPANY
332 CASS AVENUE :: MT. CLEMENS, MICH.

Copeland
DEPENDABLE ELECTRIC REFRIGERATION

NEW COIL PROVIDES 1 TO 1 RATIO WITH REFRIGERATED SPACE

Copeland Products, Inc., announce the Copeland-Larkin coil, for use in commercial installations, a development which entirely eliminates the undesirable features of dehydration and frosting.

The new coil is based on established laws of electric refrigeration: (1) that maximum refrigerating efficiency is approached as the size of the refrigerating device nears a 1 to 1 ratio with that of the refrigerated chamber; (2) temperature of the refrigerating device may be raised in the proportion as it approaches this ratio; (3) greatest refrigeration capacity is obtainable with high suction pressure. The Copeland-Larkin coil contains as many square feet of refrigerating surface as the outside area of the space in which it is installed. Suction pressure is extremely high.

The Copeland-Larkin coil consists of copper coils around which are assembled thin plates of aluminum. The size of coil and number of plates are determined by the size of the refrigerating space for which they are intended. Standard sizes, based on standard-sized commercial cabinets and cases now on the market, will be produced. Special sizes will be provided on order. In all, 56 sizes will be produced to fit all varieties of service, storage and display cases and grocery, restaurant, hospital, club and institutional coolers.

Enormous cooling effect is quickly obtained and economically maintained by means of the Copeland-Larkin coil. Coil and refrigerant temperature and the suction pressure are higher than usual and the higher operating pressure permits handling of more refrigerant with the same or less Kwh. consumption. Compressor operation is thus materially reduced. Not only do the higher temperatures eliminate frosting, but Copeland-Larkin coils show moisture constantly standing on the plates. Dehydration not only does not occur but the air in the refrigerated chamber coming in contact with this moisture picks it up to replace that ordinarily lost when it passes over a cooling coil. Repeated tests show Copeland-Larkin coils maintain a relative humidity of 85 to 96½ per cent.

"We feel that through our Copeland-Larkin coil we have advanced electric refrigeration many steps," declares Mr. McElhinny. "We certainly have answered those three main objections to commercial electric refrigeration: Inability to obtain sufficiently low temperature without frequent defrosting; the high cost of electrical refrigeration plants, and dehydration of the foodstuffs with the resultant appreciable loss of weight and decreased saleability. The Copeland Larkin coil is relatively inexpensive to install, and highly economical to operate. It is practically a 'tailor-made' cooling device. Its doubled coil surface moves the heat units twice as rapidly. It maintains an air temperature only slightly higher than that on its surface. Its inability to frost eliminates forcing the compressor, and the absence of defrosting necessity means no raising during this process of temperatures which again must be lowered after it is completed. Tests of Copeland-Larkin coils in use show that foods not only do not lose any of their moisture but actually are freshened by being placed in cabinets or counters with this equipment."

GAFFNEY JOINS JEWETT; OPENS BRANCH OFFICES

Buffalo, N. Y.—George J. Gaffney has been appointed sales manager of the Jewett Refrigerator Co. He was formerly with the Kerner Incinerator Co., Milwaukee, Wis.

Branch sales offices established under the direction of Mr. Gaffney are: Jewett Refrigerator Co., 16 East 40th St., New York City: Jewett Refrigerator Co., 228 N. LaSalle St., Chicago, Ill.; Jewett Refrigerator Co., 1101 Statler Bldg., Boston, Mass.; Jewett Refrigerator Co., 3145 N. Broad St., Philadelphia, Pa.; Jewett Refrigerator Co., 245 Spring St., N. W., Atlanta, Ga.; Jewett Refrigerator Co., 2036 East 22nd St., Cleveland, Ohio; Jewett Refrigerator Co., 608 Michigan Theatre Bldg., Detroit, Mich.; Jewett Refrigerator Co., 722 Story Bldg., Los Angeles, Calif.; Modern Equipment Co., 515 Cathedral St., Baltimore, Md.; W. H. Youse, 215 S. Cincinnati St., Tulsa, Okla.; M. J. Tierney, 112 Cutler Bldg., Rochester, N. Y.; Jewett Refrigerator Co., 803 Security Bldg., St. Louis, Mo.; Jewett Refrigerator Co., 3421 34th Place, N. W., Washington, D. C.; Jewett Refrigerator Co., Pacific Bldg., San Francisco, Calif.; W. Fred Casey & Co., 507 N. Tryon St., Charlotte, N. C.; Coastal Sales Agency, Inc., 3914 Main St., Houston, Tex.; and Floyd M. Jamieson, 909 Bisbee Bldg., Jacksonville, Fla.

Canadian branch offices are Canadian Jewett Refrigerator Co., Ltd., 45 Colborne St., Toronto, Ont., and Canadian Jewett Refrigerator Co., Ltd., 620 Cathcart St., Montreal, Can.

Kelvinator Replaces Water Bucket

Kelvinator water coolers were installed in the players' and visitors' "dugouts," and in each of the dressings rooms of the New York American Baseball Park, in New York City, along toward the end of the playing season. The picture shows Koenig of the Yankees refreshing himself at one of the new coolers in the dressing room.

Next Time Sell the Judge One Too!

OREN JENSEN, a salesman in the retail store of the Electric Device Co., General Electric refrigerator representative in Springfield, Mass., left his car a little too long in a 60-minute parking space, and when he returned he found a little white ticket attached to it, summoning him to police headquarters. This was the second offense in three days. The first lapse had cost him $3.

At police headquarters, while digging in his pockets for the wherewithal to pay the second fine, he casually remarked: "Gosh, I'll simply have to sell some one of you fellows around here an electric refrigerator if this keeps up." The probation officer of the municipal court, standing close by, became interested. "What kind of electric refrigerator do you sell?" he inquired. "General Electric," was the reply. "You're just the man I want to see," said the officer, "as I want to learn more about this product." It wasn't long before Jensen had the probation officer's name on the dotted line for a G-55. And that isn't all. He gave him the name of a good prospect from whom he also got an order a few days later. But Jensen isn't recommending this as a safe route for making sales.

DISTRIBUTOR INCREASES SALES SUPERVISION

Cleveland, Ohio.—J. A. Harlan, sales manager of Frigidaire Corp., Dayton, was in Cleveland, November 11, making a sales survey under the intensified plan of supervision of selling effort employed by William F. Gray, Inc.

The number of residential supervisors has been increased from three to five and the area under each supervisor designated as a territory. The five territories are devided into 53 zones, each of which represents the working area of a salesman.

In addition, the Cleveland organization has two commercial supervisors, one dealership, one apartment house, one water cooler and three provincial supervisors covering 19 counties.

The all-around supervision has been increased 20 per cent, reports R. D. Russell, sales manager, with the result that sales results have been substantially increased.

JARVIS JOINS LIQUID COOLER CORPORATION

Detroit, Mich.—J. G. Jarvis, formerly connected with the Detroit branch of the Norge Company, has joined the sales department of the Liquid Cooler Corp., 6527 Russell St., manufacturers of Temprite coolers.

KELVINATOR-MIAMI MOVES

Miami, Fla.—Kelvinator-Miami, Inc., formerly located at 449 W. Flagler St., has moved to new quarters at 50 W. Flagler St.

This is a National Message to the American Housewife

Good Housekeeping Institute

Recommends Proper arrangement of foods in your refrigerator, and KVP advises the use of Proper Papers for food wrapping and protection. There is a big difference—to get the most good out of your refrigerator are you using both KVP Refrigerator Papers?
There's Household Parchment for cooking and for wrapping all greasy, moist and wet foods—it's boil-proof—it wears—use it again and again. KVP Heavy Waxed Paper "Cutter Box" seals tight (one sheet will do)—keeps the moisture in or keeps the moisture out as desired. Remember, all foods should not be wrapped in Waxed Paper—for 100% results use the famous pair of KVP food wrapping and cooking papers.

Try your Grocer, Stationer, Hardware, Department Store and Naborhood Merchant first; if they cannot serve you, KVP will pay the parcel post.

Send $1.00 for the two big 50c rolls (West of Missouri and South Coast States, 60c per roll, both for $1.20 postpaid).

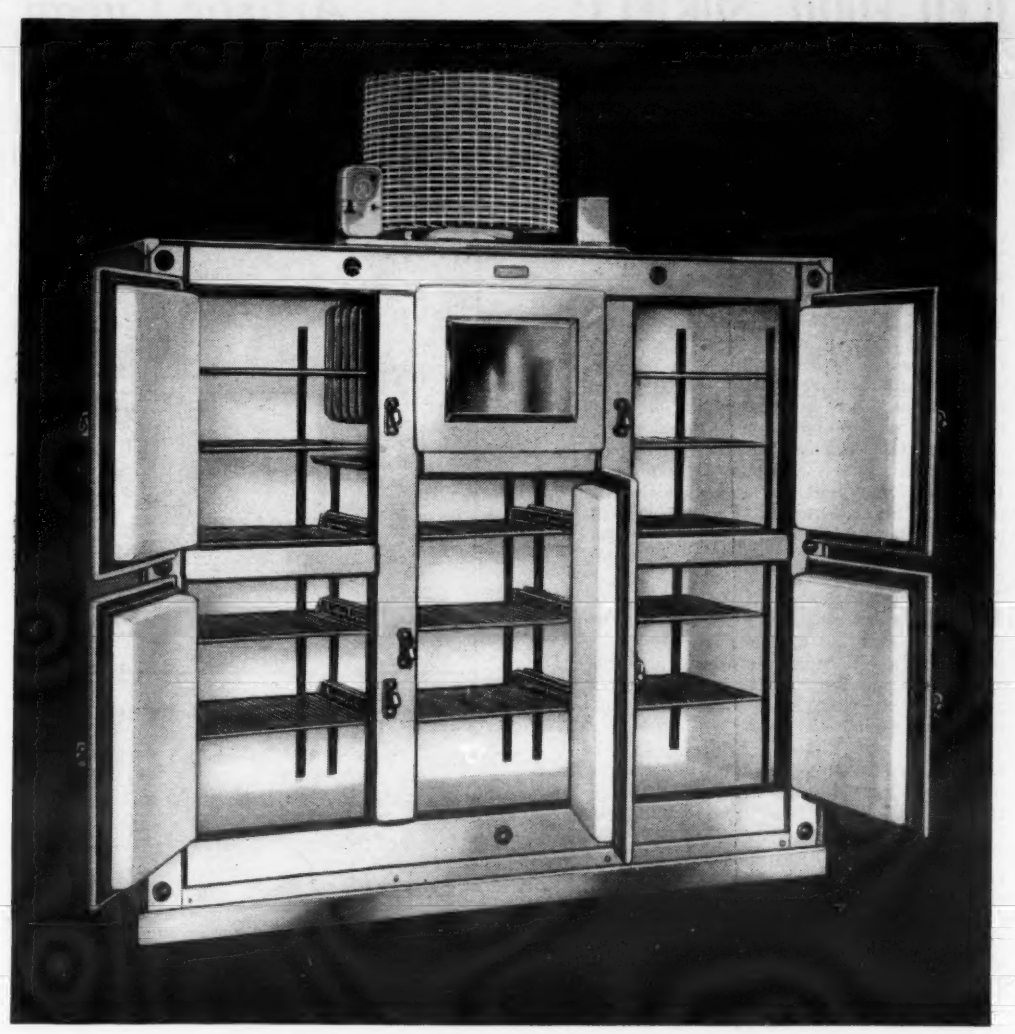
FREE When ordering, mention this ad for a Miracle Paper Dish Rag and interesting samples for you and your friends.

STANDS FOR "THE WORLD'S MODEL PAPER MILL"
KVP KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO MICHIGAN U.S.A.
MANUFACTURING WORLD-WIDE FAMOUS FOOD PROTECTION PAPERS

IF you are in any way interested in Electric or Gas Refrigeration ...read the above over twice because it will mean much to you. .. this is our National message to the American Housewife in cooperation with your refrigerator sales campaigns. Write for samples and advertising ideas that sell your refrigerators to new customers and keep old customers interested.

THEY BUILD BUSINESS

for dealers
for users



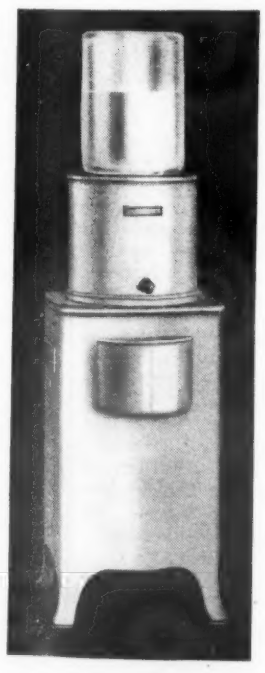
MODEL C-450 has an all porcelain interior—net food storage capacity 45 cubic feet. Shelves adjustable to 2 in. spacing. Exterior of cabinet, 79¾ in. wide, 30 in. deep, 72 in. high.

GENERAL ELECTRIC COMMERCIAL REFRIGERATORS

. . . sell readily because they help stores win new customer confidence—new trade

They're *earners*, these new General Electric Commercial Refrigerators. In markets, chain stores, groceries, delicatessens, their glistening beauty bespeaks cleanliness and fresh purity for the foods they protect . . . imparts a pleasant impression that makes store customers buy confidently, that *brings them back.*

The night-and-day cold of these refrigerators permits the addition of many new lines of perishable delicacies. New business at a profit! That's what General Electric Commercial Refrigerators offer the food merchant. Of *course* they sell readily.



The General Electric Bottle Water Cooler is operated by a 1/10 h. p. motor. Exceedingly efficient and compact—17 in. square, 44 in. high. Automatic temperature control regulates degree of coldness of drinking water to suit user.

They are space savers . . . can be placed anywhere. Each is complete within itself—the *first* commercial refrigerator with refrigerating unit and cabinet designed especially for one another . . . designed to work together for greatest efficiency at lowest operating cost.

Their dependability is unquestionable. Their simple, rugged mechanism is the same in design as that in General Electric household refrigerators of which "more than 350,000 are in use and not one owner has had to spend a dollar for service or repairs." No dealer has to sell the dependability of these refrigerators. *Everybody knows General Electric.*

SEVEN VITAL POINTS OF SUPERIORITY

1 *Easy to install*—because the cabinet and the refrigerating mechanism are completely combined in one unit.

2 *Greater storage capacity* per square foot of floor space because all the mechanism is on top, out of the way, instead of taking up valuable space elsewhere.

3 *Requires no attention.* The mechanism is simple, quiet, hermetically sealed in a steel casing . . . trouble-free, dust-proof, self-defrosting, *never* needs to be oiled.

4 *Maximum efficiency* and greatest economy in operation.

5 *Completely sanitary* and easy to clean.

6 *Self-defrosting evaporator* which minimizes dehydration, reducing shrinkage of meats and other foods.

7 *An unqualified two-year guarantee.*

EVERY GENERAL ELECTRIC REFRIGERATOR IS HERMETICALLY SEALED

Prospects Everywhere!

Sell General Electric Commercial Refrigerators to

- Bakeries
- Dairy Product Dealers
- Confectionery Stores
- Delicatessen Stores
- Grocery Stores
- Lunch Rooms
- Drug Stores
- Clubs
- Lodges
- Y. M. C. A.'s
- Fruit Dealers
- Meat Markets
- Hotels
- Restaurants
- Cafeterias
- Hospitals
- Sanitariums
- Schools
- Colleges
- Florists

GENERAL ELECTRIC
COMMERCIAL REFRIGERATOR

ELECTRIC REFRIGERATION DEPARTMENT OF GENERAL ELECTRIC COMPANY, HANNA BUILDING, CLEVELAND, OHIO

ICED FOOD, SUBJECT AT ANNUAL MEETING OF A.S.R.E., DEC. 4

New York N. Y.—The convention of the American Society of Refrigerating Engineers (headquarters at 37 W. 39th St., New York City) which will be held here first week of next month, has been arranged to appeal to all branches of refrigeration and to offer a picture of the status of the art today. In six sessions many subjects will be covered, general popular addresses as well as technical papers being scheduled.

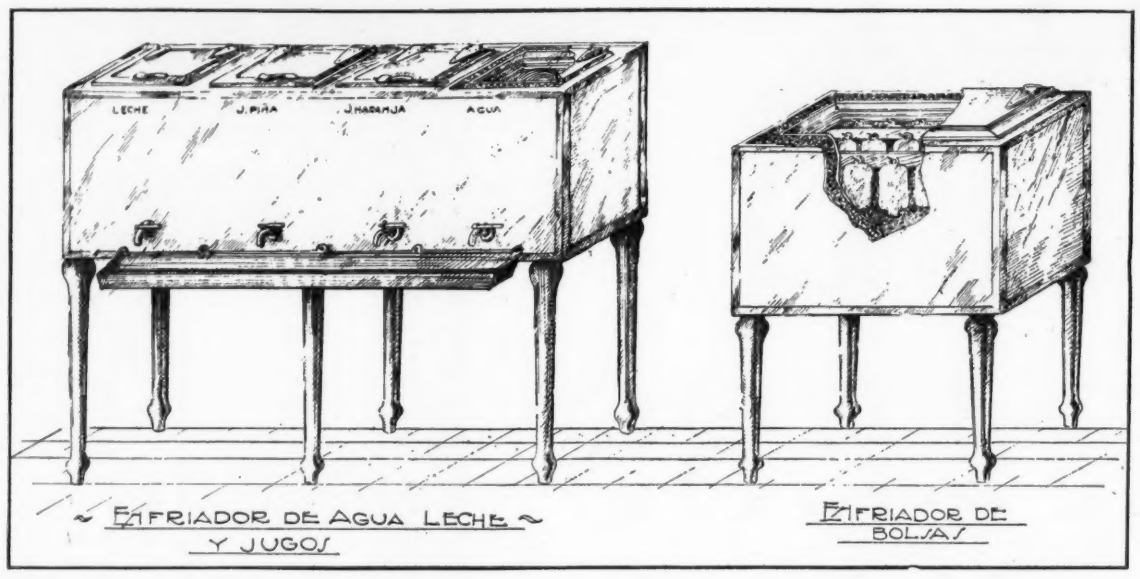
Celebrating the anniversary of the organization of the Society, December 5, 1904, the principal ceremony will take place at the banquet on Friday, December 6th. This will be at the Hotel Pennsylvania, the headquarters of the convention.

The affair starts with registration Wednesday morning, December 4, followed by a luncheon open to all in attendance, given in honor of authors and speakers; sessions will be held each afternoon and morning thereafter until Saturday noon.

Meetings of especial interest will be held on Wednesday and Thursday afternoons, during which subjects of wide interest will be considered, including frozen foods, refrigerators, low temperature research, relations to power industry, lubrication, and others. These sessions will be tied in with entertainment features.

Speakers to be heard at different sessions include General R. I. Rees, S. C. Bloom, Frank A. Horne, N. H. Hiller and Colonel Crosby Field. The names of the honorary members to be elected, together with the details of the event, will appear on the program, to be available shortly through the Society.

Artistic Cuban Temperament Demands Style in Commercial Designs



TWO interesting hospital installations in Havana, Cuba, were made recently by Hone and Padron, Servel representatives. One of these is a novel method of providing a substitute for the usual ice bag. A mixture of glycerine and water is placed in the bag and the latter is suspended in a brine solution. The bags can be made much colder than ordinary ice bags and are, of course, much easier to handle and prepare than those containing chipped ice. The lower temperatures also permit bags to be changed less frequently. Patents on this device have been applied for.

The other illustration shows an arrangement for providing cold milk, pineapple juice, orange juice and water, which is much more convenient than the usual storage in a diet kitchen refrigerator.

Incidentally, these drawings themselves are interesting as being typical of those necessary for selling the Cuban market.

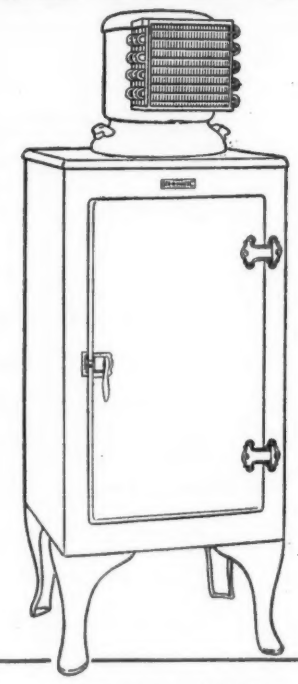
Get your share of Christmas trade...

with

WILLIAMS
ICE-O-MATIC
REFRIGERATION
JUNIOR

For Small Homes and Apartments

$175 and up*



WILLIAMS
ICE-O-MATIC JUNIOR

Offers these vital superiorities!

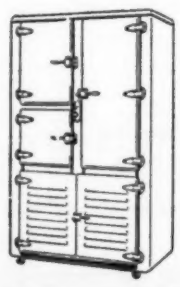
Ice-O-Matic Visible Temperature Control, for fast freezing.
Silent Operation.
Diminished Operating Cost.
Powerful Cooling Capacity.
Lifetime, Trouble-free Service.
Cabinets of Enduring Beauty, with new conveniences.

Send for special WILLIAMS ICE-O-MATIC JUNIOR *advertising*

This New Williams Ice-O-Matic Junior, an unmatched achievement in finer refrigeration at lowered cost, will double your market in 1930.

Launch this new Williams Product now—get your share of Christmas business and a flying start on the big 1930 profits that should be yours. Write or wire for new sales aids on Williams Ice-O-Matic Junior—advertisements for local newspapers that will help Williams national advertising bring prospects into *your* store, illustrated literature. Don't delay—take full advantage of the Christmas sales season.

*Prices at the factory



Williams Ice-O-Matic line includes this Benjamin Crysteel Cabinet, in five graduated sizes, equipped with Williams Ice-O-Matic units, either enclosed in the cabinet or installed in the basement.

WILLIAMS OIL-O-MATIC HEATING CORPORATION
BLOOMINGTON, ILLINOIS

DETROIT A.S.R.E. MEETING

(*Concluded from Page 1, Column 1*)

ers do not know, but Mr. Bloom expressed the opinion that 24 or 25 degrees in the display case will give satisfactory results. The big problem is to maintain a *steady* temperature, for if the temperature rises and falls it will have the same effect upon the product as slow freezing. If the temperature varies at all, it should *rise slowly* from the time the meat leaves the packer until it reaches the hands of the consumer. It is also important that the package be kept closed, for if the air strikes the frozen meat, moisture will collect immediately.

There are several processes of quick freezing. The Cook process is being used by the Atlantic Coast fisheries, while the Birdseye process is being used by General Foods.

Carrier Engineer Discusses Air Conditioning and Room Cooling

H. Peacock, of the Carrier Engineering Company's Detroit office, 2626 Buhl Bldg., also addressed the Detroit Section of the A. S. R. E., using lantern slides to illustrate the latest types of equipment for air conditioning and room cooling. Mr. Peacock pointed out that air conditioning had its start in industry, where it was widely used in the tobacco, textile and printing fields to maintain proper temperatures and humidity for manufacturing processes.

Two general types of systems have been developed to meet the market requirements. First is the central system, such as is installed in theaters, office buildings and industrial establishments at the time the building is erected. The central system requires a rather elaborate installation of air ducts throughout the building.

Second, a self-contained unit in several sizes is offered for installation in old buildings, and is particularly suitable for tenants who cannot justify the expense of installing the duct system.

The method of dehumidifying air is rather puzzling to the layman, since excess moisture is removed by passing the air through a dense spray of water. Actually, the air coming through the spray is completely saturated with moisture, but since the air is also cooled in passing through the cold water, its capacity for holding moisture is greatly reduced. For example, if air taken in at 85 degrees Fahrenheit and with a 60 per cent saturation of moisture, is reduced to 50 degrees and saturated 100 per cent, it carries only one-half as much moisture as when it entered the equipment. The humidity of the air is automatically controlled by varying the temperature of the water spray. This water is chilled by a refrigerating unit. The same water is used over and over again, except when the apparatus is cleaned every few days. Excess water taken from the air overflows into the drain.

Next Meeting at Kelvinator Plant

The December 9 meeting of the Detroit Section will be social in character and will be held at the plant of the Kelvinator Corporation, where excellent facilities are available.

MEAT PACKERS MAY RETAIL QUICK-FROZEN MEAT IN PACKAGES

New Chain Store Plan Awaits Approval by Supreme Court

MANUFACTURERS of electric refrigeration systems, also display cases and coolers for retail meat markets, are awaiting with interest the outcome of a legal action started jointly by Swift & Co. and Armour & Co. to abrogate a consent decree which now prevents them from owning and operating retail stores, and from selling, either wholesale or retail, unrelated food products along with their meats. If the court action is favorable, it is rumored that certain packers will immediately open up a large number of retail meat markets. It is also reported that the new stores will be fully equipped with the most modern refrigeration, and that refrigerated meat, quickly frozen by a new process, will be retailed in packages to the consumer.

The whole plan is one of most revolutionary character and has been stimulated by the declining profits of the packers caused by competition of chain stores which have been buying from, and even establishing, local packing plants. While efficiency methods of the highest type have long been used by the packers, they have been confronted by rising costs of distribution, which offset the gain secured in their centralized plants in Chicago and Kansas City. It is expected that the government will agree to the plan of the packing companies to go into the retail meat business because of the argument that it will reduce the price of meat to the consumer, although there are many interests, of course, opposed to such a plan. An idea of the magnitude of the plan is indicated by the rumor that 500 retail meat markets will be opened in the city of Chicago alone.

According to reports, the old process of chilling meat in the packing plant, which required at least 48 hours, will be supplanted by the new quick freezing process, which will require only 40 minutes. Only a few hours will elapse between the time that a live animal enters the plant until it will be displayed in the retail store in attractive half-pound packages. Graded quality and the ultimate in sanitation will be featured as an appeal to the public.

SILVER SOLDER USED TO INSURE GOOD JOINTS

It has often happened that metals or combinations of metals have long been overlooked, then developed by concentrated research and found to be just about indispensable in some lines of business. This is true of silver compositions for brazing, commonly referred to as silver solders.

Silver solders, which have recently been standardized by a producer of silver—Handy & Harmon, 57 William St, New York City—are now being used by many manufacturers of electric refrigerators. They are used principally on copper coils and other copper or brass connections.

The various compositions flow at from 1325 to 1600° F. They are extremely fluid and penetrate to all parts of a tight fitting joint. The union has a tensile strength of from 40,000 to 60,000 lbs. per sq. in. Silver solder joints do not develop leaks if the solder is properly used. In addition, they resist corrosion and stand up under shock or high pressure.

The impression seems to prevail that silver solders are very expensive. The percentage of silver varies from 10 to 80% and there is quite a range in cost.

The Filtrine Filter assures pure, clear water from your ELECTRIC Water Cooler

WRITE FOR DETAILS

FILTRINE MANUFACTURING COMPANY
49 LEXINGTON AVE. Brooklyn, N.Y.
Manufacturers of FILTERS & COOLERS of all sizes

BETTER PROFITS

from BOTH *markets*

Under the Servel Franchise

Easier sales to homes

The new Servel has better sales points and more of them . . . features that attract every woman . . . advantages that help you capture this active and ever-growing market.

Servel freezes faster **. . . makes ice cubes more quickly without any need for temporary manual adjustments.**

Absolutely dependable **. . . a big fast freezing unit that runs smoothly and silently year after year in any climate . . . with surprisingly low current consumption.**

More room—all of it useful **. . . wider doors, larger shelves and plenty of space between them. No crowding or tipping of dishes—no stooping and straining to reach the bottom shelf. And a flat top, useful and easily cleaned.**

Complete series of models **. . . satisfying every individual requirement . . . models from 5 to 10 cubic feet capacity, and each one a beauty! All in 5-coat finish, positively chip-proof. All hardware chromium plated.**

MEN who handle Servel own a complete refrigerator business . . . with a domestic and a commercial line that help to sell each other. Sales come faster and easier because Servel is built on a strict quality basis, yet sold at competitive prices.

You are selling better refrigeration, with stronger selling points. The franchise carries the assurance of a substantial and rapid increase in business for men who are both progressive and aggressive. No other men can secure it.

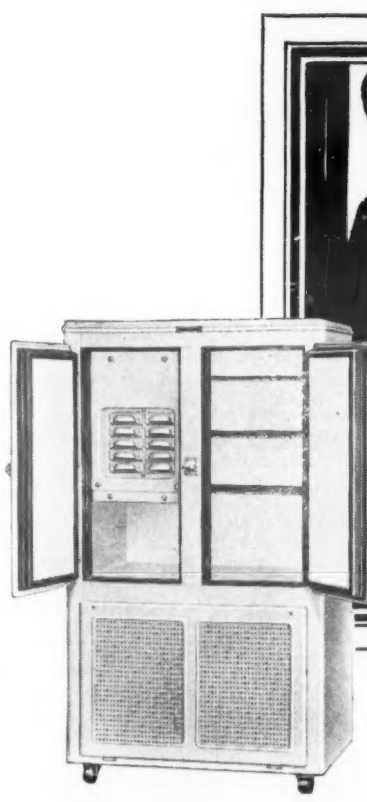
Easier sales to merchants

Here's a tremendous market that has hardly been touched as yet. With Servel you get the biggest share of this profitable business. For the food merchant wants two things: absolutely dependable refrigeration and the utmost operating economy.

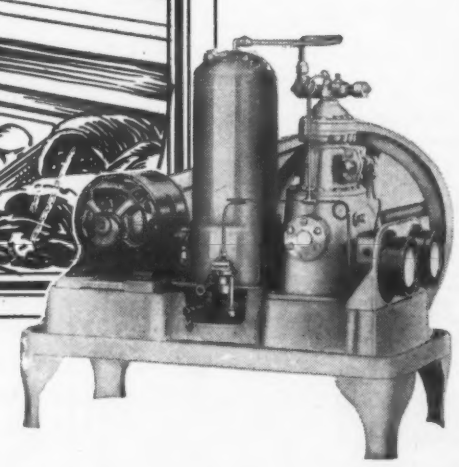
You can give him more refrigeration for the amount of current used . . . and an installation that runs smoothly and steadily without care or adjustment. The superior economy of Servel can be proved beyond question and guarantees thousands of dollars worth of commercial business.

Most flexible line **. . . Servel commercial units are so flexible you build almost any installation from stock . . . with parts so light one man can erect all ordinary jobs . . . with engineering so simplified the salesman can usually complete all necessary calculation on his first call.**

If you are prepared to handle a *complete refrigeration service* under the Servel franchise, write to our main office immediately. We will outline for you the profit possibilities in your city.



Model K-7 ***. . . for the woman who wants a medium size refrigerator with every convenience. Seven cubic feet capacity . . . with ten trays for ice cubes and frozen desserts.***



Commercial Model 75-AW Machine, ***for soda fountains, meat refrigerators, florist's coolers, display cases, milk coolers and circulating water systems.***

SERVEL SALES, Inc.

Evansville, Indiana

QUALITY!

This is the Mark of Insulation Supremacy . . . It Helps You Sell!

THE day of insulation "bargain-hunting" is at an end! Every refrigerator manufacturer now realizes that the matter of insulation should not be passed over lightly—should not be met in the cheapest way possible. The Dealer also recognizes that *quality throughout* is a thing of great importance, for in this field the buying public demands a quality product. The customer is being educated to know that although one cannot *see* the insulation it is nevertheless a vital part in the success or failure of the unit itself. Even the finest unit cannot function perfectly unless the cabinet is insulated with Dry-Zero. This insulation supremacy, proved by tests by the U. S. Bureau of Standards, establishes Dry-Zero as the most efficient commercial insulant known. Bought on the BTU Basis, it is also the most economical. The Dry-Zero Corporation invites price comparison on the basis of equivalent permanent insulating value. And that is the only practical and fair standard for judging an insulation's worth.

Freedom from moisture, *freedom from troublesome insulation odors, freedom from extravagant operation of the machine—as well as needless wear and tear—is what Dry-Zero offers the prospective buyer. For you it means an added advantage—lightness in weight, lowering transportation and handling costs.

These are definite factors that go to build your personal success and satisfaction. See that the Dry-Zero mark of QUALITY is on every Dry-Zero insulated refrigerator. It will help you sell!

Authoritative proof of Dry-Zero's greater efficiency is clearly shown in the chart below. Let us send a sample of the Dry-Zero pliable slab—for your own test.

Comparative Values

established by U. S. Bureau of Standards, Armour Institute, State Universities and other impartial authorities.

Material	Wt. cu. ft.	Insulation Value	Absorption*
DRY-ZERO	2 lbs.	4.15 to 4.3	14
Corkboard	9.5 to 13 lbs.	2.9 to 3.3	28
Wood fibre board	13 lbs.	2.9 to 3.2	115
Flax fibre board	13 lbs.	3 to 3.2	66
Cane fibre board	15 lbs.	2.7 to 2.9	78
Mineral wool slab	17 lbs.	2.6 to 2.8	

*Test run by University of Minnesota.

DRY-ZERO CORPORATION
130 N. Wells Street, Chicago, Ill.

*The Dry-Zero fibre, CEIBA, is the same as that used in U. S., and other, Navy Life Jackets.

DRY·ZERO

LUHR "FRIGICAR" TO BE MADE BY NORTH AMERICAN CAR CORP.

Chicago, Ill.—The North American Car Corporation, 327 South LaSalle St., announces the development of a mechanical transit refrigeration system, a mechanically-cooled refrigerator car, to be known as the Frigicar. Otto Luhr, of Chicago, is the patentee of the new car. Henry H. Brigham is president, and C. O. Frisbie is vice-president of the North American Car Corporation.

A description of the car and the problems which were considered in working it out from a construction and maintenance standpoint, were presented on behalf of Mr. Luhr at a meeting of the Institute of American Meat Packers held at the Drake Hotel, Chicago, Friday, October 18, 1929, as follows:

"Mr. Chairman and Members of the Engineering Section of the Institute of American Meat Packers:

"For a great many years some simple, sturdy and practical means of improving the method of refrigeration of railway refrigerator cars has held the attention of refrigeration engineers, as well as those in charge of the maintenance of refrigerator equipment.

"Various plans have been suggested and some have been tried, as evidenced by the records of the United States Patent Office. In many of these plans one or more essential parts was overlooked, due either to lack of knowledge of refrigeration, or else to a lack of understanding of car construction and maintenance, depending on whether the inventor happened to be a car man or a refrigerating engineer.

"Mr. Otto Luhr, of Chicago, the patentee of this new car, a refrigerating engineer of high standing, with whom many of you are acquainted, has for many years worked on the feasibility of refrigerating cars mechanically, and has for the last four years co-operated with us. I regret that Mr. Luhr's quite serious illness prevents his being here today, and on that account I will confine my remarks to a description of the car and the problems we have worked out, considered from a construction and a maintenance standpoint.

"In the development of 'Frigicar,' it was found necessary to consider many problems. The most important being:

"1. What system of refrigeration would more readily adapt itself to railway cars?

"2. How was it to be installed in the car?

"3. What would be its size?

"4. How was it to be operated?

"5. How was the car to be kept cold when the car was not in motion?

"6. How was the car to be pre-cooled?

"7. What would be the cost of installation?

"'Frigicar,' as it has been finally developed, uses the ammonia expansion system, consisting of an ammonia compressor of suitable size installed underneath the car in a heavy steel housing, expansion coils and brine tanks located in each end of the car in the space formerly occupied by the ice bunkers, and an ammonia receiver to carry the ammonia charge. Mechanical temperature controls for each end of the car and an air-cooled condenser located on the roof of the car.

"When the car is in motion the refrigerating mechanism is driven by a combination of universal flexible shaft and roller chain connected to one axle of the car. The mechanism operates regardless of the way the car travels. When the car is not in motion, it is kept cool by the brine tanks, whose temperature has been brought down while the car was in motion.

"Many tests have shown the present arrangement of 'Frigicar' meets all present railway requirements. The entire device is simple and rugged, there being no delicate parts to be broken or get out of order when the car is being switched or handled in transit.

"There are no electrical devices in the car, except the motor for pre-cooling, which can be connected to any power system and can also be used, if necessary, while cars are being held at destination. To change from transit to stationary operation requires only a few moments. There are no coils in the loading space of the car, either on the sides or the ceiling.

"Owing to the great simplicity of the device, and the elimination of water dripping from the ice and its tendency to wet the insulation and rot the wood and rust the steel parts of the car, we estimate not only a large saving in car maintenance over a wet car, but also the reduction of large losses due to water and brine dripping on the rails, bridges and other railroad structures.

It is estimated that these cars may be built and equipped for approximately $1,000.00 more than the ordinary refrigerator car, and as we have suggested, the maintenance should be very low, owing to the fact that the car is as dry as the ordinary packing house cooling room, short freezer or household refrigerator. Our company plans the immediate construction of quite a large number of these cars, and we also have plans for installing the system in other refrigerator cars owned not only by ourselves, but cars of other ownership."

DIRECTOR OF SALES

H. C. Clappison

Detroit, Mich.—H. C. Clappison has been named vice-president and director of sales for G. M. Dwelley, Inc.

Mr. Clappison has had long experience in the refrigeration industry. Formerly district representative of Toledo Scale, he went to the Square D Co., first as special representative and later as assistant sales manager. He joined Kelvinator Corporation in 1924 and became district manager of the New York and Pennsylvania territory. In 1927 he resigned from Kelvinator Corporation to become sales manager of Rice Products, Inc., from which position he resigned in January of 1929 to go with G. M. Dwelley.

In his new position, Mr. Clappison will have charge of Flexo Tray, Apollo ultra-violet lamp and Daley exerciser sales.

HUTCHINSON JOINS OVALLE AS SALES PROMOTION MANAGER

W. M. Hutchinson, formerly assistant advertising manager of the Refrigeration Department of the General Electric Company, Cleveland, Ohio, has joined N. K. Ovalle, Inc., General Electric refrigerator distributors, Harrisburg, Pa., in the capacity of sales promotion manager, effective November 1.

LYNAM TAKES POST WITH LIQUID COOLER

Detroit, Mich.—J. P. Lynam has joined Liquid Cooler Corp. as special sales representative for southern California.

Mr. Lynam is a refrigeration engineer of several years' experience and training. He will contact all refrigeration distributors and dealers in his territory and will render engineering service on their water or beverage cooling problems.

WELSBACH NAMES DIERKES DISTRICT SALES MANAGER

Boston, Mass.—J. M. Dierkes has been appointed district refrigeration sales manager for New England by Welsbach Co., Gloucester City, N. J.

Mr. Dierkes was formerly connected with Copeland Products, Inc., Detroit, as district sales manager, and was in charge of the retail sales at Baltimore, Maryland.

GETS HOSPITAL CONTRACT

Michigan City, Ind.—Contract for St. Anthony's hospital refrigerating system was let Oct. 25, to Crum Electric Co., local General Electric Co. representative.

BRUNSWICK-KROESCHELL REFRIGERATION

CUSTOM BUILT

ELECTRIC REFRIGERATION

for every refrigeration requirement

BRUNSWICK-KROESCHELL COMPANY
Refrigerating & Ice Making Machinery
NEW BRUNSWICK, N.J. - CHICAGO, ILL.

YOU'VE BEEN WAITING FOR THIS

Here it is!

A TOP GRADE ELECTRIC REFRIGERATOR WITH PORCELAIN LINED CABINET

$150.00 F.O.B. DETROIT

It's the
Absopure
BABY GRAND

HERE is the greatest value ever offered in an electric refrigerator.

Think of it. A value so generous---a performance so outstanding that there is nothing on the market with which to compare it.

The Absopure Baby Grand opens up the great, popular electric refrigeration market for the first time because it combines the quality and price demanded.

You have been waiting for such a job because you know just what it means in the way of quantity sales and profits.

Here it is at last.

Absopure American Beauty and Princess Models---both Duco and Porcelain---also have unusual quality and are low in price.

Get our proposition to distributors.

Act now. Write, wire or phone for distributor or dealer proposition. Territory is going fast.

The ABSOPURE BABY GRAND *The World's Lowest Priced* ELECTRIC REFRIGERATOR

ABSOPURE MAKES THE LARGEST LINE OF DOMESTIC AND COMMERCIAL ELECTRIC REFRIGERATION EQUIPMENT ON THE MARKET

ABSOPURE REFRIGERATION CORPORATION
THEODORE AT THE GRAND TRUNK RAILWAY - - DETROIT, MICHIGAN

Absopure

INDUSTRY COOPERATION

Organizing Electric Refrigeration Dealer Associations

By Frank W. Gray

Western Sales Manager, Absopure Refrigeration Corporation

THE electric refrigeration industry has undergone an evolution during the past few years in the course of which technical difficulties in the machines and their installation has for the most part been eliminated and the public has been educated to accept mechanical refrigeration as a necessity rather than as a luxury. The greatest thing to be hoped for in the development of the industry during the coming year is that vicious and unethical competition which is accountable for much of the loss suffered by dealers will be corrected by a widespread and intelligent growth of the electric refrigeration dealer association movement. The law of self-preservation is fundamental in business as well as in life. It is only in the maturity of an industry that most dealers come to realize that co-operative effort, after all, is the best expression of the law of self-preservation. For only through co-operation can ethical practices be established which safeguard the effort and the capital invested in a business.

Why Association Movements Fail

The association idea is not new to the refrigeration industry. In the East, where electric refrigeration merchandising is further developed, dealer associations are operating successfully in several localities. In other parts of the country the writer has discovered association movements which have either failed outright, or have been non-productive of results. Upon analyzing the reasons for the failures of these associations, we find that the following predominate:

1. Lack of a fundamentally strong organization to begin with, with an impartial chairman and a plan for organizing.
2. Transgressions of agreements on the part of members.
3. Inability to reach agreements on important points.
4. Lack of means of enforcement of agreements.
5. Refusal of certain strong organizations to join.

Basis of Organization Must Be Sound

It is imperative in the forming of any organization that the need of such an organization must be felt, and the members serious in their purpose to co-operate insofar as is possible for the good of their individual businesses. In this connection it is advisable that a chairman be appointed who is impartial in his views, who is capable of conducting meetings and keeping such records as may be necessary, and who is paid for his work in keeping the association alive. An attorney is well suited to this position—particularly an attorney who has had corporation work and who knows something about the operation of associations.

The first important step in the association movement is to get together long enough to develop a group psychology without disagreements which may disrupt the enterprise. There are certain sore subjects in any business competition—such as radical price competition—which are best avoided in the beginning of association meetings. Let the members select topics which they *can* discuss to their mutual benefit and limit their agreements to what they safely agree upon.

Safe Topics Of Mutual Interest

Any group of representative electric refrigeration dealers might safely enter into a discussion of the free service guarantee, and how long it should extend after the date of purchase. They might discuss time payments, interest rates, credit risks. Another topic which should be of mutual interest is the question of safety codes in apartment house and multiple installations. Competition of ice companies is another interesting subject. Educational work in the breaking down of sales resistance of the public towards mechanical refrigeration is another safe topic.

Meetings can be held either monthly or semi-monthly. In many industries dealer association meetings are held weekly. The usual meeting, however, should last for at least two hours, and there might be objections to weekly meetings because of loss of time involved. Luncheon meetings are not best adapted to the serious consideration of such problems as may be discussed, since they are too apt to be informal in character and relaxing in effect. It is well to assess dues for absences, however, since the attendance of all members is essential to the transaction of any business.

The Formation Of Agreements

Granted that the chairman of the association is capable of assembling the members and building up a group psychology by maintaining a balance during the period of formation, the next step to be considered is the consideration of agreements which will be mutually beneficial. No agreement, however casual it may be, is apt to be binding in effect unless some measures of enforcement are accepted. The arbitration laws of various states differ on the subject of enforcement of association agreements. An agreement, however, can be written to function as a legal contract with collectable damages in case of transgression. If the chairman of the association is an attorney, as suggested, he should be able to advise the members on this question.

In case of a reported transgression the usual procedure would be this: that the chairman should make an investigation and if possible convince himself that the report was or was not true. In case he was convinced that it was true he would assess a reasonable fine according to a scale agreed upon in the writing of the contract. The offending member, if not agreeable to paying this fine, might appeal to an arbiter who would hear both sides of the story. If the arbiter decided in favor of the assessment, the member might then carry his appeal to a superior court for either a jury trial or hearing in front of a judge. As I have stated before, the laws in various states differ on this arbitration question, and local associations must be governed accordingly.

In order that there be no stubborn resistance to fines levied for the breaking of agreements, it is very important that such agreements as are made by the association be very carefully considered beforehand. Proposed agreements should be brought up by the various dealers in their own sales meetings, and discussed fully with the salesmen of the organization. The salesmen, after all, are the actual contact men of any organization, and should be parties to and in accordance with such agreements as are formed in the association for the promotion of good business.

A striking instance of the participation of salesmen in association agreements was found in a certain large western city recently. The heads of certain businesses (not connected with the electric refrigeration industry) found themselves unable to agree in their association meetings upon a question of policy. One of the older heads in the association made a wise suggestion: "Since we cannot ourselves agree on this point, there is no use in discussing it further. Let's put it up to our employees and allow them to decide the matter in a meeting of their own." The suggestion was acted upon, and Thursday afternoon meetings were made compulsory upon the salesmen who contacted this contract business. The result was that after some fiery arguments, the salesmen themselves agreed upon a policy of "live and let live" and this policy has been adhered to ever since.

The Price Situation

Naturally the matter of competitive prices is the most obvious problem for consideration, but it is a dangerous topic for the initial meetings of associations, and should be reserved for discussion until the group psychology has developed to a point where the association has strengthened its hold. For when resale prices are discussed the various points of view are most strongly brought into play, and all of the native selfishness of human nature tends to prevent a reasonable attitude. And yet it is the vicious competitive bidding, particularly in commercial and apartment house multiple installation sales, that has done the most to eat the heart out of profits during the last two years.

What Can Be Hoped For

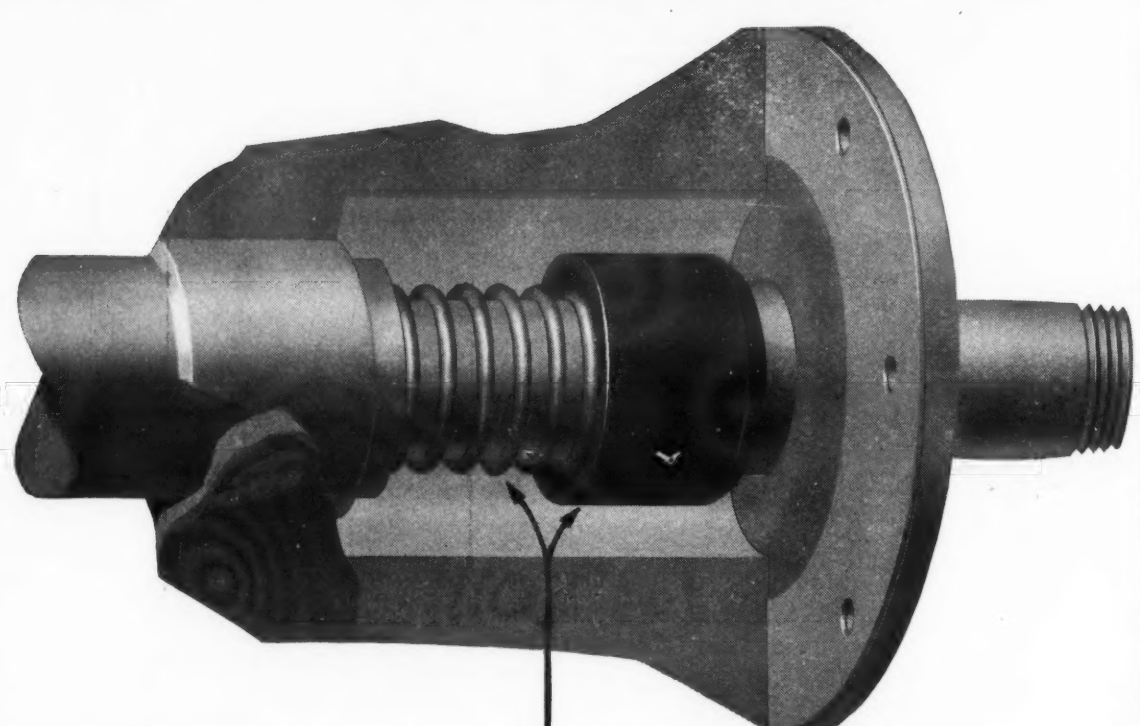
Let it be assumed that no dealer association, however Utopian in aspect, can ever iron out all of the sore problems of competitive business. Let it be assumed that the association cannot bolster up the position of dealers who are financially weak or inefficient in their administration. But assuming that a dealer association is able to agree and co-operate on *anything*, the position of the industry would be materially benefited by its widespread organization.

And as mere possibilities for the future, let us consider the following:

Suppose that a dealer association should agree, as other industrial associations have agreed, to do some common advertising for the good of mechanical refrigeration, and some common educational work among the schools for its benefit. Suppose the dealer association should co-operate in the proper formation of city ordinances specifying multiple installation safety codes and lend their moral support to the enforcement of those ordinances. Suppose that the dealer association could in the future establish an installation and service corporation, each member buying shares of stock, for the purpose of maintaining efficient installation and service for all machines, thus taking the burden of the individual installation and service departments off the members. Suppose that in a given locality some collective buying were done in refrigeration accessories, such as copper tubing, brass fittings, refrigerants, etc. Suppose that the associations should co-operate on all matters of credit, employment of help, national food preservation campaigns, collective service, and even collective delivery. Such observations sound like Utopia, but they have been agreed upon and carried out in other industries to the mutual benefit of all involved.

At any rate, it is well to remember that the grand old game of poker is what it is because of its ethics; and that when the electric refrigeration industry, in its mature vision, begins to work out a code of ethics for agency competition, there will not only be business enough for all—but profit as well.

We've Dammed Your Biggest Profit Leak!



TELEGRAMS, letters, orders, congratulations, have poured in from dealers and distributors since our recent announcement of the Cooke Seal Unit. If you missed reading it, here is our story again:

No longer is there any need to lose time and money servicing a "leaker." No need to pull out the compressor, bring it back to the shop, dismantle it—refinish the crankshaft—fit new seal—reassemble—return—install. All that is now OUT!

Now you can buy a Cooke Seal "Unit" to fit the more prominent makes of electric refrigerating machines which you, or your newest assistant, can install in 30 minutes *right on the job*. It is not necessary even to remove the compressor from the box—simply remove the old seal, slap in the new one, replace flywheel and belt, shoot in some gas and be on your way. Many hours and dollars saved.

For you—a profitable method of servicing a leaking machine—and also a method of repair which actually improves the machine—for the Cooke Seal will not leak—will not squeak because it revolves WITH the shaft, seals WITH the pressure (instead of against it) and forms its ground joint against the seal cap.

A replacement Cooke Seal "Unit" consists of the parts A, B, C, in the above illustration. "A" is the end plate or cap against which the Cooke Seal "C" revolves, forming a ground joint. "B" is a gasket. Cap and seal are lapped in gas-tight at the factory and come to you all ready to install. Long wearing, almost frictionless — and reasonably priced. Get all the facts. Clip and mail the coupon today.

COOKE Seal Ring

20 N. Green Street Dept. U Chicago

Cooke Seal Ring,
20 N. Green Street, Chicago.
Dept. U.
Please tell me about your special service to refrigerator distributors, dealers, service men.
Name.....
Address.....
City.....State.....

Fulco

REFRIGERATOR COVERS

"FULCO" covers are used by those dealers who realize the importance of making deliveries in perfect condition—without scratches or broken enamel. For they know that complaints mean dissatisfied customers and loss of business.

"FULCO" covers are a real service feature that helps sales and holds trade.

Substantially constructed, heavily padded, box-shaped, providing perfect protection.

Give us the dimensions of your refrigerators, and let us quote special prices on your individual needs. Write our nearest house.

Fulton Bag & Cotton Mills

Manufacturers Since 1870

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DENVER UTILITY USES TRADE-IN ICE BOXES TO EXPAND MARKET

By Archie Richardson

A COMPLAINT from a customer can never be thought of as anything particularly welcome, but what comes of it depends on the tact and the resourcefulness of the person who handles it. There are many cases in which a complaint can be converted into an asset and made the means of winning the lasting friendship of the aggrieved party.

For instance, a woman "with blood in her eyes" recently came into the Biloxi, Mississippi, office of the Mississippi Power Company with a batch of bills to show that her lights, gas and ice were costing her $36 a month. She was referred to A. C. Thorpe, sales manager.

"Entirely too much; we must do something about this," he replied after he had gone through the bills and figured up the average. He agreed to look into the matter and let her hear from him in a day or two. His sympathy and evident interest in her behalf robbed her of her anger, and she went out in a more friendly mood.

Here, Mr. Thorpe decided after studying the situation, was a case where the best thing he could do for her would be to sell her an electric refrigerator. Also a range and a water heater, and put all three on the power line. By taking advantage of the low power rate, he figured out, her lights, cooking, hot water and refrigeration would cost her only $18 a month; just half of what she had been paying before.

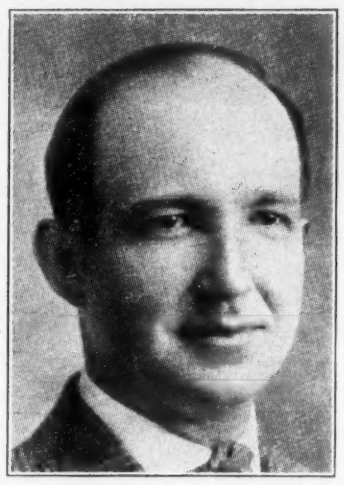
With complete data in hand, he went out to her home and proposed the completely electrified kitchen. She at first didn't believe it could save her half her bills, and then she demurred at the investment that would be required. But the saving, he pointed out, would more than pay interest and depreciation, and in time pay for all the equipment. She would have an electric range, hot water at the turn of a button, and all the convenience of electric refrigeration, along with the usual lighting, and save money. So she gave her order, and has become a strong booster for the electrical kitchen idea.

That is the idea of Mr. Thorpe: sell kitchen ensemble wherever possible, and in other cases sell a refrigerator, a range or a water heater to begin with, and then keep on after the customer until the other two are sold. The modern kitchen is not complete until it has an electric refrigerator, range and water heater, he insists, and is bringing a surprising number of Biloxi's housewives to his way of thinking.

This company has for some time pushed the sale of ranges quite intensively, with the result that there are many more ranges than refrigerators on the company's power lines. Every range owner is a live and immediate prospect for a refrigerator, Mr. Thorpe reasons, and during the last few months he and his assistants have brought a large portion of the city's range owners to his tion of the city's range owners to their way of thinking by showing them that, with the range already installed, the extra cost of the refrigerator will be such a small portion of the ice bill as to make the continued use of ice refrigeration an extravagant and needless drain on the family budget.

The health appeal also figures strongly in the refrigerator sales plan Mr. Thorpe has found so successful. "A very large portion of our minor ailments, and many serious ones, have been traced to inadequate refrigeration, and your doctor will tell you I am right," he adds. "Your refrigerator may be as good or better than the average, but unless it will preserve food for several days in warm weather it is not good enough to safeguard the health of your family. An electric refrigerator would reduce the little ailments that come usually during warm weather when food is most subject to spoilage and contamination, and it might prevent serious sickness."

Go Getter



Roy McElhaney

Huntington, W. Va.—Selling 40 W. R. 40 Kelvinator condensing units, a like number of Ebco water coolers, a number of bubblers, and securing an order to furnish refrigeration for a hospital, was just a month's job for Roy McElhaney, salesman for the local Kelvinator Sales Co. His achievement is going to give him a trip to Detroit, Mich., with all expenses paid.

Mr. McElhaney secured two orders from Chesapeake & Ohio Ry. Co. to equip its new plants with Kelvinator-Ebco water cooling systems. A shop, now under construction at Russel, Ky., will install 21 W. R. 40 compressors and as many coolers, and the local locomotive shop now being constructed will require 19 Kelvinator-Ebco coolers. He received a third order to furnish refrigeration for the railway company's new hospital, also being constructed here by the John W. Cooper Co., of Richmond, Va. Mr. McElhaney sold the water cooling equipment being used by International Nickel Co.'s plant, a few years ago, and the installation has proved satisfactory.

SMALL CITIES BEST FOR REFRIGERATOR, OIL BURNER DEALER

ELECTRIC refrigerators and oil burners are good selling mates in cities and towns having populations of less than 100,000, according to Richard C. Hay, writing in November issue of the *Fuel Oil Journal.*

Both of these industries have taken extensive strides during the past five years, both have organized financing, selling and servicing programs on the basis used by the automobile industry during the past 20 years.

Sales executives and experts agree that while 100,000 population is set as a deadline for the combined handling of refrigerators and burners by one concern, it is still only an arbitrary figure. Some prosperous communities with a smaller number of inhabitants do a volume of business that demands separate organizations for the sale and service of these two appliances.

But there are 1,400 cities in this country ranging in population from 5,000 to 100,000, according to the 1920 census, and this offers a large potential market for the dealers who combine refrigerators and burners, continues Mr. Hay.

There is a unanimity of opinion among dealers in large cities that they cannot combine the two successfully. E. A. Teplow, president of Teplow Service Corp., Boston, Mass., says that past experience proves for him that oil burners and refrigerators cannot be merchandised in cities above 50,000 population unless two distinctly separate sales organizations operate. He believes that either one of the two affords a sufficiently large field to keep any salesman busy the year round. He does not believe in peak months and maintains that the requisite for successful year-round selling is a proper mental attitude on the part of the salesman. Mr. Teplow is convinced that manufacturers are not as satisfied with distributors who handle the two units as they are with the distributors who specialize in one. The manufacturers feel that either one of the two is considered a minor or a major line by the distributors.

J. A. Pierson, vice-president of Atlantic Machine Works, Inc., assumes the viewpoint that if a distributor handles both lines, additional capital must be put into the business, separate and distinct sales and service organizations must be maintained, and equivalent amounts of money must be spent to advertise each product. He continues by saying that separate service units must be organized, as it is unprofitable to pull a repairman from one job so that he can give attention to another, even though that repairman is well versed in servicing both refrigerators and burners. One of the lines suffer while the other is receiving attention.

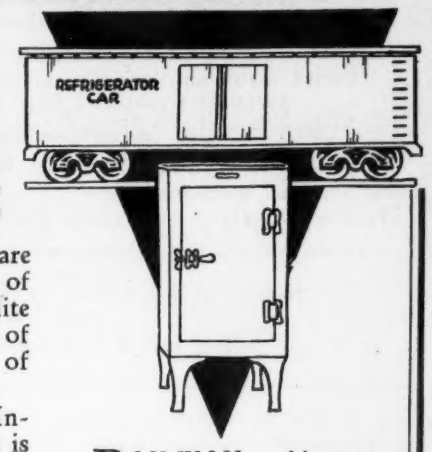
Savannah, Ga., with a population of 65,000, was not a profitable base for a combined marketing of the two, according to F. O. Howden, Howden Utilities Co. This company tried a hook-up and found it unprofitable. Mr. Howden mentioned another Savannah firm that tried the combination and also made a failure of it.

Reports from small towns, however, where the markets are not large enough to warrant separate organizations for burners and refrigerators, show that the two are being combined satisfactorily. C. J. Harried, Aurora, Ill.; S. H. Bowers, Jr., Emporia, Kan.; Gettys Bros., Rouse Point, N. Y., and J. Alison Butler, Charlotte, N. C., are unanimous in their opinions that the two are good selling mates in their respective communities. These men market the combination successfully.

In concluding his article, Mr. Hay points a second time to the fact that there are 1,400 cities in United States with populations less than 100,000, and states that as more dealers appreciate the possibilities of this large field for team-mate selling, a tremendous market will be adequately cultivated.

INSULITE
the Wood-Fiber Insulating Board

Combines STRENGTH and LIGHTNESS



STRENGTH and lightness are two important essentials of refrigerator insulation. Insulite has both. Its strength permits of reduction or entire elimination of heavy wood framing.

Made of spruce wood fibers, Insulite is light in weight—but it is rigid and not easily broken. Insulite will not crack, disintegrate or rot under the most severe moisture conditions.

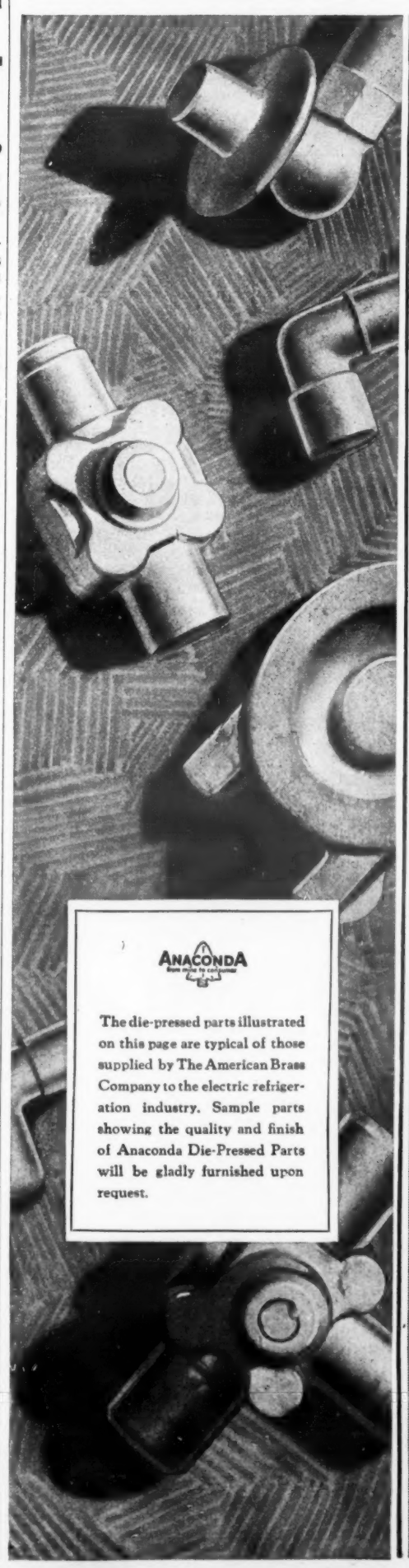
Insulite is non-odorous and will not absorb odors — insuring a permanently sweet refrigerator. Insulite is furnished cut to size, ready for application—with lapped edges to form perfectly insulated and heat sealed joints, if desired.

If you are not using Insulite investigate its merits now—let us send you a sample and complete information.

RAILWAY refrigerator cars must of necessity be efficiently insulated, and with materials that will stand up year after year in this trying service. More than 44,000 such cars are Insulite insulated—and no replacements have been required.

Here's another testimonial: When General Electric built their new improved all steel Refrigerator they used Insulite insulation. This selection was made after exhaustive experiments and many tests.

THE INSULITE COMPANY
1203 Builders Exchange, Minneapolis, Minnesota (*A Backus-Brooks Industry*) Dept. 30K 737 Conway Building, Chicago, Illinois



ANACONDA

The die-pressed parts illustrated on this page are typical of those supplied by The American Brass Company to the electric refrigeration industry. Sample parts showing the quality and finish of Anaconda Die-Pressed Parts will be gladly furnished upon request.

Cut your Costs
with
ANACONDA
DIE-PRESSED PARTS

ANACONDA Die-Pressed Parts have come into favor with the electric refrigeration industry because they reduce production costs.

These parts are dense, close-grained and uniform in structure, making them gas, air and water tight. Free from hidden flaws common in castings, rejections with Anaconda Die-Pressed Parts are reduced to a minimum. They are smooth of surface, close to dimensions, lighter in the rough and require very little machining. This minimizes scrap losses.

Their high tensile strength—nearly twice that of brass castings—permits a saving in material costs because less metal is necessary. The ability of Anaconda Die-Pressed Brass to withstand sudden temperature changes, corrosive action and mechanical stress is also a factor of importance in many cases.

Manufacturers in many different fields have improved the quality of their product and effected substantial savings in production and material costs by using Anaconda Die-Pressed Parts. These will be supplied machined when called for. Inquiries accompanied by blue prints, sketches or models of parts required will be given prompt attention. Full information on request, or a representative will gladly call at your convenience.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Conn.
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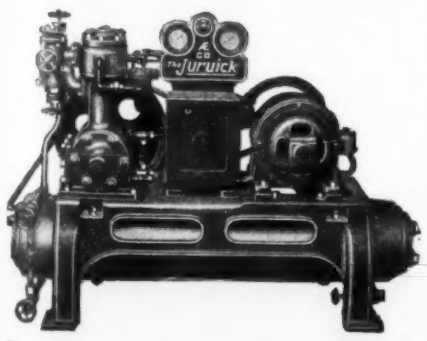
ANACONDA
COPPER ANACONDA BRASS

JURUICK REFRIGERATION



There is a type for EVERY need

A complete line of JURUICK AUTOMATIC units and AMMONIA COMPRESSORS of one-quarter ton to 40 tons refrigerating capacity provides economical service on big or little refrigeration jobs.

JURUICK insures smooth, silent performance, has automatic control, is easy to operate. It costs little to install and is easy for dealers to sell.

AMERICAN ENGINEERING COMPANY
2420 Aramingo Avenue, PHILADELPHIA, PA.

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

PUBLISHED EVERY TWO WEEKS BY

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Frozen Food

INDICATIONS are that the refrigeration industry is on the verge of a new forward movement of tremendous importance. In this issue is reported news of a development which has been under way for some time but the significance of which has been realized by only a very limited number of people. Even those who are aware of the experiments and studies which are being carried on by some of the largest industrial and banking organizations in the country find it difficult to grasp the far-reaching effects of the departure from present methods.

Plans are rapidly coming to a head which involve most revolutionary changes in the production and distributing of food. The possibilities of the situation have already excited the leaders of the food industries. The fact that the whole scheme is based upon refrigeration may well cause this industry to sit up and take notice. Manufacturers of the specialized refrigerating equipment which will be required to effect the first steps in the proposed change are busily searching for technical data to guide them in making adaptations or adjustments necessary to meet the potential demand.

Briefly, it is proposed that all sorts of perishable food—meat, fish, fruits and even vegetables—be frozen at the packing plant by one of the new quick processes, these foods to be graded, packaged, transported and finally delivered to the consumer in the same frozen condition, thereby avoiding all of the waste and spoilage and greatly reducing the cost of these foods by eliminating many inefficient methods which have been inevitable in the past.

The factors of economy, graded quality, extreme sanitation and complete elimination of spoilage are matters of interest to every individual. The widened market for all kinds of commercial refrigerating equipment, such as display cases and market coolers, is immediately obvious. Even more important to the electric refrigeration industry is the tremendous effect upon the food habits of the public which will surely follow the introduction of frozen food on a large scale. The educational effect on the public may possibly exceed that of all the advertising and selling effort which the industry has put forth up to the present time.

Prodigious effort is always necessary to establish a new idea broadly in the public mind. The inertia of habit is hard to overcome. Years pass during which worthy products languish for lack of public approval. Then a time comes when it seems that everyone accepts at once. Sometimes it is difficult to determine just why the resistance breaks down so suddenly, although many may stand ready to take the credit. Often some wholly unexpected and unplanned event may be the spark which explodes the barrier.

It is entirely conceivable that the recent disturbance in Wall Street has startled the public mind into a new consideration of economic values, and that the chain of events to follow will bring about an understanding of the food preservation needs which the refrigeration industry is now prepared to serve.

Right now executives in all fields are diligently analyzing their own business in an effort to determine whether their product and service are such that they will stand economic pressure, if such pressure comes from conditions beyond their control. At such times only those whose products or service are fundamentally sound and in step with the march of progress can be entirely sure of their position. A widespread movement focusing public attention upon the cost, quality and health values of food will open wide the door to this new industry that has been striving to impress its message upon the public.

Keen students of the market for refrigeration have been so impressed by the fundamental character of the service rendered and its wide application that they have freely predicted that an industry of the first magnitude must result. The conviction that the electric refrigerator will ride the next big wave of popular demand is firmly impressed in many minds, but even the industry enthusiasts could scarcely foresee and measure the economic forces which are now stirring to bring about a realization of the dream.

Audiffren-Singrun Unit at Swiss Fair

HERE'S the Swiss idea of simplicity. This exhibition space is devoted to showing just one model in the line of A.-S. Cold Machines. By sheer concentration of display the relatively small space is given spaciousness and the eye is immediately carried to the product. The A.-S. Cold Machine of Basel is one of the best-known Swiss makes. Other refrigeration displays at the 1929 Swiss Industrial Fair this summer featured the Auto-Frigor of Zurich, the Frimax machine of Genf, and the Schlor machine.

REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, referring to the query number.

Sylphon Mercury Controls

Query No. 300—"Will you please forward us the address of the Fulton Co., manufacturers of sylphon mercury controls?"

Answer—Fulton Sylphon Co., Knoxville, Tenn.

Foreign Representative

Query No. 301—"If you should learn of any firms desiring to be represented in Italy, I would appreciate it very much if you would get me in touch with them. I have received catalogues and propositions from several companies but have been unable to make satisfactory arrangements because of the fact that all American companies lay claim to a large organization but do not offer credit, and as a result the proposition is possible only to a powerful capitalist. It is my desire to represent an American firm but, of course, under less difficult conditions."

Brine Tanks

Query No. 302—"We are interested in a source of supply for brine tanks."

Clock Recorder

Query No. 303—"Will you please let us know the name and address of the manufacturer or distributor of the defrosting clock attachment which you mentioned in the October 9 issue of the NEWS, under Multiple System Installations?"

Query No. 304—"Will you please give me the name of the electric device for recording power used and amount of refrigeration in B. t. u. as mentioned by Frank W. Gray, Pacific Coast district manager for Absopure Corporation, on page 18, October 9 issue of the NEWS?"

Answer—Servis recorder made by Service Recorder Co., Hanna Bldg., Cleveland, Ohio.

Szillard-Einstein Refrigerator

Query No. 305—"Will you please advise us if you have any information regarding the electric refrigerator which, it was reported in the *Chicago Tribune* on October 31, was suggested by Dr. Izillard and perfected by Prof. Einstein?

Answer—We have no authentic information regarding the Einstein unit. The *Detroit News* carried a story from Berlin, dated November 15, copyrighted by the *Chicago Daily News*, which casts some reflection on the workability of the Einstein idea but which lacks the earmarks of a reliable report. The story follows:

"Prof. Albert Einstein can discover the relativity theory, change the conception of time and space, and metaphysically create a new heaven and a new earth. But whether he can build an electrical refrigerator on purely physical and not chemical lines is an open question.

"It is noted that some time ago, Prof. Einstein's Hungarian disciple and assistant, Leo Szillard, approached the master with a 'great idea' for a new type of mechanical refrigerator which, if placed under the great name of Einstein, would surely sell. Prof. Einstein is totally uninterested in business and money, but Szillard was poor and the idea seemed interesting.

"After some hesitation, Einstein agreed. Calculations were carried out and an application was made for a patent; then the idea was sold to the big German Allegemeine Elektricitaetswerke—'A. E. G.'—for commercialization. Whether money was actually paid is not known. But Einstein's name ought to sell anything, and the A. E. G. does not make refrigerators of its own but sells an American model.

"Alas, when the A. E. G. experts made real experiments, a hitch developed. Had the great Einstein overlooked something? It appeared that he had. Just what he overlooked has not been made public but it seems to have something to do with the friction of rapidly moving mercury. The fact seems to be that unless some way is found of removing this difficulty, the great Szillard-Einstein refrigerator cannot be produced as planned.

"This does not mean that no new refrigerator will be made—the name Einstein looks too well in advertising to be sacrificed. Therefore, at some future time the A. E. G. will market a refrigerator on new lines which can be expected to bear the name of Einstein. But it is doubtful if it will really be close to the original plans, and Berlin's 'practical engineers' are chuckling softly at the great theoretician's mistake."

Christmas Saving

Bloomington, Ill.—Christmas Club savings in the United States, soon to be distributed to an army of members, will total $600,000,000 this year, an increase of 9 per cent over 1928. Of the sum, $228,000,000, or 38 per cent, will be devoted to Christmas purchases, and $180,000,000, or 30 per cent, to permanent savings, according to estimates discussed by C. U. Williams, president of the Williams Oil-O-Matic Heating Corporation.

"Last year men and women who thus saved through 1928 devoted $213,000,000, or 38 per cent, to Christmas purchases, and $165,000,000, or 30 per cent, to permanent savings. The 1929 increase of amount in each division is gratifying and encouraging, revealing liberal holiday investing and a disposition to stow away a good share for future needs. Holiday buying will reveal thrift in many lines, as shown by reports from the household utilities field. Oil burners and refrigerating machines, for instance, are popular as gifts to the household. Record-breaking trade in both lines is indicated for Christmas.

"But not all the year's savings will be devoted to purchases and permanent savings. It is estimated that $78,000,000, or 13 per cent of the total, will be appropriated for commitments. Insurance premiums will take $36,000,000, or 6 per cent of the sum, and mortgages, mortgages interest and taxes, $60,000,000, or 10 per cent.

"For education and travel, $12,000,000, or 2 per cent of this year's total, will be used. Charity will receive $6,000,000, or 1 per cent.

"Our whole nation annually grows more thrifty, and each year invests its savings more sensibly, as these figures clearly reveal."

Insulated Container

Query No. 306—"The Manufacturers' Division of the United States Chamber of Commerce has suggested that I write you.

"I wish a container which will permit the maintenance for 3 hours or more of heat in one part and refrigeration in the other, to transport a complete meal. Can you advise me of a manufacturer? If none makes a dual form of container, one that makes a large container with sections sufficient to hold a heated meal, and another for iced foods. Or, one who will be in a position to make the required container. Orders might be placed in half-gross and gross lots."

LOS ANGELES CODE BARS USE OF MULTIPLE SYSTEM

A manufacturer of water cooling equipment of the type designed for multiple hook-up, calls attention to the following sections of the refrigeration code of Los Angeles, Calif. He points out that it closely follows the New York code which bars the installation of multiple systems above the first floor of apartment buildings. The Los Angeles regulations eliminate practically all systems from public buildings, except self-contained units.

"No portion of any refrigerator and/or refrigerating system, including any piping therefor, shall be located in any building containing a theatre, motion picture theatre, auditorium, church, assembly room, or any building used for any similar purpose, or in any room or portion of a building used for sleeping purposes, or in any public hallway of any building, or in any room or portion of a building containing a public stairway, except as hereinafter provided in this section.

"No refrigerator, evaporator, cabinet, compartment and/or similar equipment shall provide and/or furnish refrigeration for more than one (1) tenant unless such evaporator, cabinet, compartment and/or similar equipment is located entirely within one room. Any refrigerator and/or refrigerating system may be located in any such building in the event that every portion thereof, including any piping therefor, is completely separated by vapor-proof walls and partitions constructed as required by Section 236, from every portion of the building used for any of the purposes mentioned in the first paragraph of this section; and, in the further event that there is no door, window or opening in such wall or partition; and in the further event that any door, window, vent or opening from any such refrigerating machinery room is not less than twenty (20) feet in every direction from any exit, passageway, court, door, window or opening communicating with any portion of the building used for any of the purposes mentioned in the first paragraph of this section; provided, however, that an exclusively brine circulating system may extend outside of any such room."

CORRECTION

Lewis A. Hubbs is district sales manager for Electrolux in Seattle, and not a distributor, as announced in an article entitled "Hubbs Gets Electrolux Franchise," which appeared on page 2 of the NEWS October 23.

SELLING METHODS

Food Preservation, Not Luxury Is Outstanding Sales Appeal

By Fred DeArmond

EIGHTY per cent of the "Anglo" or American families in El Paso, Tex., are potential buyers of electric refrigerators, in the opinion of E. O. Cone, General Electric dealer. There are still some people, Mr. Cone says, who conceive electric refrigeration as a luxury. Some of these people, who believe their means are too limited to buy refrigerators, do not consider as extravagance paying from $200 to $300 for a radio or phonograph, and $1,000 and up for an automobile.

It is always harder to sell a necessity than a luxury. But Mr. Cone sees this situation rapidly changing with regard to his product. As an illustration he cites the fact that during the first year his sales were all for cash, the second year's business showed 30% time payment sales, and the third year the time sales mounted to 80% of the total. About one-third of the latter were financed on a two-year basis, which indicates that the market has been expanded to include a large section of the salaried class. Many units are now sold to families with incomes considerably under $200 monthly.

It is interesting to learn from Mr. Cone's experience that many renters are buying electric refrigerators. A large proportion of apartment houses are installing electric refrigerators—a step which obviously will have a strong influence in enlarging the demand. When an apartment house tenant who has become accustomed to electric refrigeration moves into a home of her own, she is almost certain to demand the same appliance there. He has traced a number of sales to El Paso women to their having spent vacations on the Pacific Coast or in the East and getting the refrigerator habit. Once a woman has actually used one, the desire to be an owner is created—the genesis of a sale.

The finance companies in El Paso insist on the installation of mechanical refrigeration in new apartment houses which have their backing. It is a very important factor in keeping the apartments rented.

In reaching the salaried or working classes, Mr. Cone drills his salesmen in the dollars and cents appeal of economy. Here is the way he puts the matter to a prospective buyer whose mind dwells on the initial cost: He quotes authoritative statistics to show that $575 is the average annual food bill for American families; that 20% of this is waste, and that one-half of the waste is due to inadequate refrigeration. This is equivalent to saying that refrigeration which really preserves food effects an annual saving to the average family of $57. Add to that the saving in ice, which he estimates conservatively at $48 a year. From this total of $105 saved, deduct $30 for electric bill, and you have a positive monetary saving of $75 a year. In other words, the electric refrigerator, in addition to the convenience and security that it affords, actually pays for itself at the rate of $75 a year. And they can be bought in El Paso for as low as $9.00 a month payments.

But the principal way in which the market can be further extended, he continues, is in educating the public to the need for refrigeration. He does not think that the great unsold public—the ninety-five per cent of electrically wired homes—can be reached by talking and advertising conveniences and extra features. It is true there are many women who want refrigerators because they have style, and because they are considered to represent luxury, yet these same people are not being sold on the vital need for them. But the worthy and substantial buying appeal should be adhered to, and that appeal is food preservation.

Mr. Cone carries to his public with all the earnestness that he is capable of the fact that refrigeration which fails to maintain a minimum temperature of 50 degrees is worse than no refrigeration at all. Worse, because you have depended on it. He shows that whereas the law provides that dairies must maintain their milk at 50 degrees or less up till the moment of delivery, the consumer puts it into a box that is often ten degrees warmer. The packing houses must keep their meat in a 40-degree temperature. The person who eats meat in his own home should know that it needs the same preservation after being purchased at the market that it had previously been given. He explains the insidious manner of food decomposition, often present in its initial stages when not evident to naked eye, the taste or smell. He quotes the city health officer of El Paso, who says that the recent absence of ptomaine poison is, in his opinion, largely due to the quite general use of mechanical refrigeration in public eating houses, soda fountains, delicatessens and stores.

These are things that Mr. Cone sees as necessary instruction—not propaganda—which manufacturers and dealers must get to the public before electric refrigerators reach a distribution comparable to automobiles or radios. They are a positive necessity but people do not yet realize it. When they do, the limitations that have in the past hampered the market development, will disappear.

MORRISON TAKES CHARGE OF KELVINATOR BRANCH

Cleveland, Ohio—A. I. Morrison has succeeded T. E. Focht as sales manager of the Kelvinator factory branch here. Mr. Morrison was formerly a supervisor for the company in the Cleveland district. Prior to joining Kelvinator last spring, he had been in direct selling work for eight years, beginning in Indianapolis as a Singer sewing machine salesman.

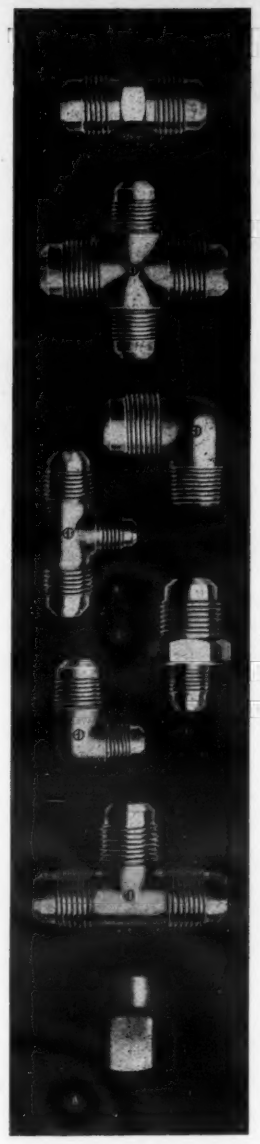
Aside from using the regular Kelvinator plan of training and supervision, Mr. Morrison is finding a plan of dividing salesmen in two classes, namely, junior and senior salesmen, very effective. The junior salesmen work on salary and commission and are very closely supervised. Senior salesmen are on straight commission and are more or less free-lance workers.

One of Mr. Morrison's new junior salesmen, who has only been with the company a month and a half, went out last week and made a sale a day, including one to an ice man who runs three ice trucks. This young salesman, a former bank clerk who had never had any previous selling experience, sold the ice man on the saving and sanitary features of electric refrigeration, although the customer handles in the neighborhood of 15 tons of ice a day during the summer and could hardly consider the cost of his own ice an item.

All Quiet

AN ex-wag—he has retired since this happened—thought he would have some fun with a coupon which he came upon in a Frigidaire advertisement. Above the space for one's name and address, the coupon bore the line: "Please send me a couple of interesting books." Books on Frigidaire is what was meant, of course, but the prankster wrote in the margin, "Make one of them 'All Quiet on the Western Front,'" and mailed it in.

Two days later, a Frigidaire representative called upon him and immediately plunged into a speech on the quietness of the machine. "They used to be a bit noisy," but no longer. "No, sir! . . ." The coupon-sender finally realized that the salesman thought he was dissatisfied with Frigidaire because of noisiness and had come around to assure him that it was quiet on all fronts. He had to listen to the argument over and over again, and while doing so resolved to have done with pranks forever.—**The New Yorker.**



FORGED BRASS FITTINGS

Built Right to Stay Tight

In order to insure positive fits the machinery limits on Commonwealth Brass Fittings are exceptionally close.

Every thread is Sharp and Uniform. Seats are smooth. Every fitting is closely inspected.

Send for our Catalog No. 36 on Seepage Proof Pipe & Tube Fittings

COMMONWEALTH BRASS CORPORATION

Commonwealth and G. T. R. R.

Detroit, Mich.

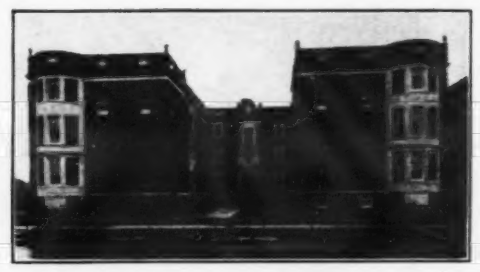
Alaska Electric Cabinets

used in Cleveland's smartest new apartments

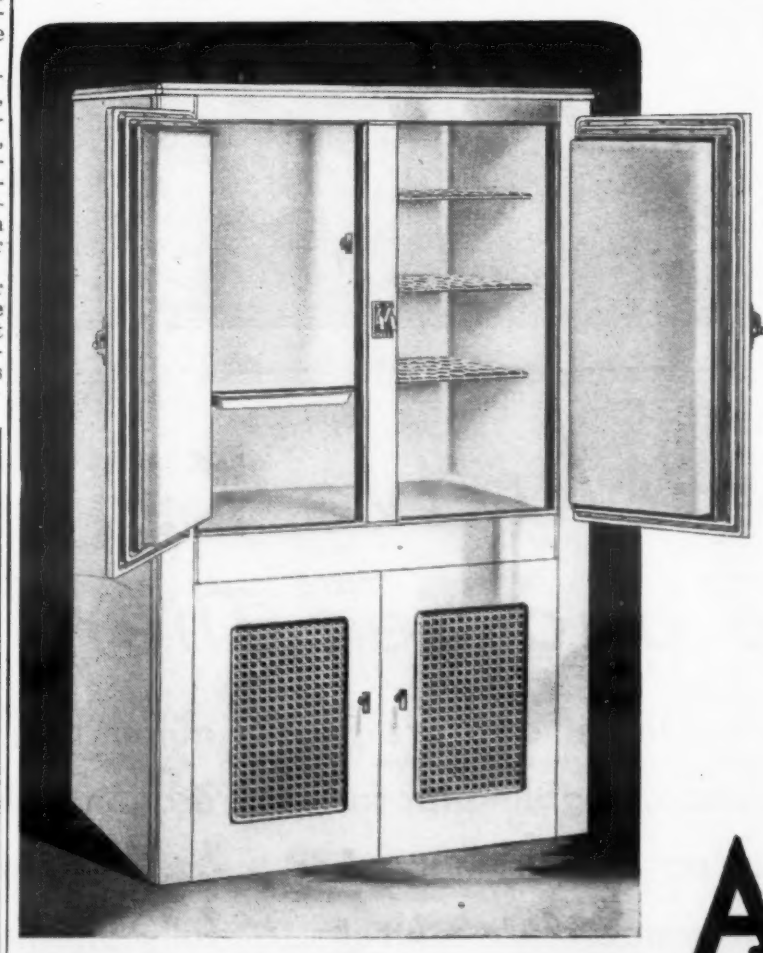
No. 2 of a series

Rolyat Manor, 1849 Taylor Road, Cleveland Heights, uses 12 Alaska Cabinets with Norge Units.

1877 E. 90th Street, Cleveland, uses 11 Alaskas with Copeland units.



2840 E. 132nd Street, Cleveland, uses 19 Alaska Cabinets with Frigidaire units.



No. 740

This cabinet has the famous Alaska perfected insulation. Porcelain Exterior—Seamless Porcelain Lined. All Doors Have Porcelain Pan Linings and Double Air-Tight Gaskets, Two-Inch Insulation in Walls, Top and Doors. Three-Inch Insulation Bottom.

Alaska's *new perfected* insulation wins immediate acceptance in Cleveland, too! Apartment owners and operators approve it instantly because they know it actually *reduces* refrigerating costs by *holding* low temperatures.

Fifty-one years of truly scientific cabinet building assure continuous satisfaction in these Cleveland apartments. The other progressive apartments all over the United States will enjoy this same satisfaction in the same measure.

Write us today for complete information regarding the entire line of Alaska Electric Cabinets.

The Alaska Refrigerator Co.

Muskegon, Michigan

ALASKA

Perfected Insulation Cabinets

The Alaska Cabinet is suited to practically all types of electric refrigeration

BAROSTAT

VALVES and SWITCHES FOR PRESSURE CONTROL

An Entirely New Principle

Snap Action Valve

that positively solves

TWO TEMPERATURE CONTROL

Write for Description

Refrigeration & Other Applications

BAROSTAT COMPANY

19 Pearl St., Boston, Mass.

ANNOU

The NEWEST and GREATEST KELVI

"THE FINEST ELECTRIC

New and Exclusive Kelvinator Features

Go and See Them Saturday

Ice-O-Thermic Tubes—the latest and greatest contribution to electric refrigeration, enabling far faster freezing—from water to ice in an astonishingly short period. The super-automatic low-temperature control . . . Refrigerator, ice-maker and cold storage plant in one, each functioning independently of the others . . . Super-automatic in every phase of operation—freezing, refrigeration, cold storage . . . Ice capacity up to 35 pounds . . . Kelvinator Cold-Keeper cuts down operating periods fully one-third, yet maintains perfect refrigeration . . . New beauty in cabinet design, finish and hardware. Porcelain interiors. New rust-proof metal construction.

ANNOUNCING

KELVINATOR

REFRIGERATORS EVER BUILT—*With KELVINATOR'S new* Ice-O-Thermic Tubes, *the most important convenience and utility yet offered to the user of electric refrigeration"*

H. W. Burritt

Vice-President, Kelvinator Corporation

THIS coming Saturday, November 23, everywhere throughout America, the new Kelvinator organization presents the newest and greatest Kelvinator line, incorporating exclusive features and conveniences, and performing services *totally new to all electric refrigeration.*

Kelvinators are priced as low as $185 F. O. B. DETROIT

Under the inspiration of the new leadership placed in charge of Kelvinator last January, Kelvinator sales began to shoot upward almost at once. Notable refinements were made in the product; and within six months sales had far exceeded any normal or seasonal expectancy and reached the greatest volume in Kelvinator history.

Now come the new Kelvinators—*first complete product of the new administration—splendid realization of the ambition to surpass all previous electric refrigerator performance.*

They are the most modern and most advanced expression of electric refrigeration, engineered and built by the longest experience in the industry.

By means of Ice-O-Thermic Tubes, they bring to the home the very ultimate in *automatic fast freezing* and automatic low-temperature control.

For the first time, they provide a refrigerator, an ice-maker and a cold storage compartment in one cabinet.

They afford a new standard for the fast freezing of ice cubes. All this in addition to the perfect refrigeration of food, winter and summer alike, on the basis of true home economy and absolute reliability.

In electric refrigerator value, the new Kelvinators lead the world. We believe they will not soon be equalled, surely not excelled. They are presented in three complete lines of cabinet models, each in sizes and capacities to meet the needs of every home.

Every electric refrigeration dealer—whether he sells Kelvinator or not—will be vitally affected by what Kelvinator has achieved in this new line. As Kelvinator's finest product it will be backed by the most extensive publicity campaign in Kelvinator history. No detail has been overlooked that will effectively contribute to greater markets and greater profits for Kelvinator dealers.

Investigation may reveal a valuable Kelvinator opportunity in your own neighborhood. Interested dealers are invited to write or wire for full details of the Kelvinator franchise.

Tune in on the Kelvinator broadcast through 39 radio stations
Friday evening, November 22. See your local programs

Kelvinator Corporation, 14250 Plymouth Road, Detroit, Michigan

KELVINATOR OF CANADA, LIMITED, LONDON, ONTARIO KELVINATOR LIMITED, LONDON, ENGLAND

When a football team
needs two yards
for a touchdown,
it uses its best play!

when you have a sale
"almost over"
there is one selling point
you can always depend on:
"Yes, Madam, corkboard
keeps this cabinet
***permanently* moisture-proof."**

Novoid Corkboard Insulation
CORK IMPORT CORPORATION 345 W. 40TH ST. NEW YORK
"Permanent Protection for All Refrigeration"

IN ELECTRIC REFRIGERATORS . . .

***Back of* Good Design—**
Good Construction

AN Electric Refrigerator can be no better than its component parts. Most important is the refrigeration unit. If the refrigeration lines corrode, if compressor or evaporator rust—*good-bye to good service!*

Copper, Brass and Bronze parts assure greatest efficiency, along with safe and uninterrupted service. The vital portions of the best-constructed refrigeration units are made of these non-ferrous metals. They are rust-proof and highly-resistant to corrosion.

The use of less durable metals in an effort to cut costs proves false economy. Superior construction is the better answer to competition. Is it wise to sacrifice efficiency and long-life for the saving of a few pennies?

In cabinet construction the majority of manufacturers prove the superiority of nickel-plated or chrome-plated Brass and Bronze for trim and hardware by continuing to use it.

Our Technical Department may be freely consulted on any problems concerning the use or application of our metals. In the past three months we have successfully cooperated with seven refrigeration companies in solving specific problems of construction.

COPPER & BRASS
RESEARCH ASSOCIATION
25 BROADWAY, NEW YORK

Midwestern Office: Landreth Building, St. Louis, Mo.
Canadian Office: 67 Yonge Street, Toronto, Ont.
Pacific Coast Office: Architects Building, Los Angeles, Calif.

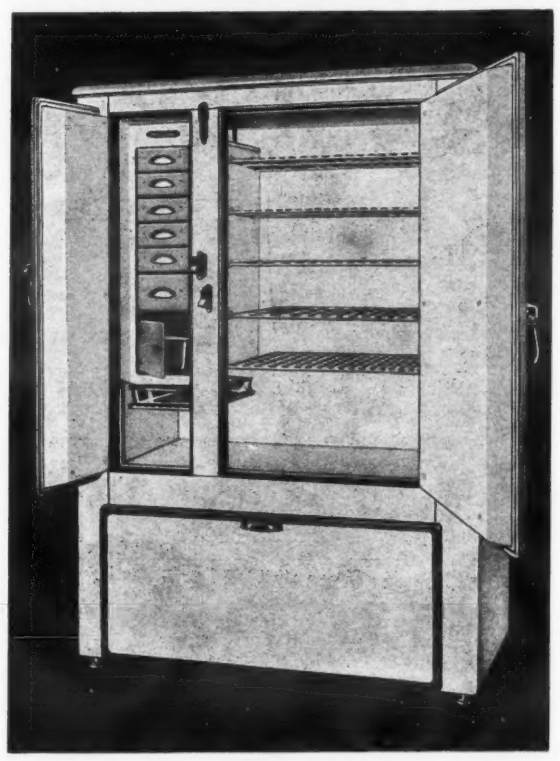
COPPER, BRASS, BRONZE — THE WORLD'S MOST USEFUL METALS

KELVINATOR SEES 1930

Completes Successful Year

George W. Mason, president, who is credited with making a remarkable record during his first year at the helm of the Kelvinator organization.

Ice-O-Thermic Tubes



One of the 1930 Kelvinator models, showing the added compartment for quick freezing by means of the new Ice-O-Matic tubes.

Twelve New Models for 1930

Five "de luxe," four "standard" and three "utility" models comprise the new Kelvinator line for 1930. All have "ice-o-thermic tubes" for fast freezing.

(Continued from Page 1 Column 5)

porcelain, finished in Kelvinator gray trim. These cabinets maintain four temperatures at one time. A food compartment is always under fifty degrees, a chamber for normal making of ice cubes is kept below freezing point, a compartment for storage of frozen foods or ice cubes maintains a distinct temperature, and the ice tray, which is completely surrounded by coils, creates a temperature low enough to freeze desserts or water very rapidly. The cold storage chamber, a new feature of Kelvinator, can be used either as a place to keep foods or it can be used for the purpose spaciou and well arranged, all-white of freezing ice. It has an ice-making capacity of 20 pounds. The food compartment affords a widespread shelf layout and has an electric light in the front top, which thoroughly lights the interior. The DeLuxe line is also provided with double depth freezing tray for either ice or desserts, in addition to several single depth ice cube trays.

Standard line cabinets possess the same improvements in design as the De-Luxe models, same massive appearance, spacious and well arranged, all-white porcelain interior. They have an exterior of gray porcelain, white doors and door latches placed in new and attractive positions. A wide door to the food compartment and a narrow door for the freezing chamber add to the outer beauty of the Standard models.

The Utility cabinet models are designed to meet the requirements of the great majority of people who seek electric refrigeration for the home at a minimum cash outlay. The Utility cabinets are all porcelain lined, the exterior is of white lacquer and they are built on generous lines with roll-edge top and new hardware. They have the improved refrigeration unit, with Ice-O-Thermic tubes for fast freezing.

The 1930 commercial line by Kelvinator has two additions to last year's models. One is an air-cooled unit, with refrigerant cooled compressor head, and the other is water-cooled, with water-cooled compressor. Both are designed to handle heavy refrigeration loads.

Four new cross fin cooling units are also being offered by Kelvinator, model X5-140, a giant unit that is capable in itself of handling the average market cooler. It has an ice-making capacity equivalent to 105 tons of ice per year. Model X5-130, **fin cooling unit** for large Model X5-50, with a length of 96 inches long and is of the triple-section type. Model X5-50, with al ength of 96 inches, single section, and model X5-30, are additions that Kelvinator expects will strengthen its position in the commercial field.

Model Y30, Kelvinator pressure type, and model Y10, bottle type, are two new water coolers designed for office use. Both have a storage compartment. The outstanding advantages of these Direct-Flo Electric Water Coolers are that the outer tube cannot be damaged from freezing, the system is entirely closed and dry, making for sanitation, the storage tank insures full drinking stream at uniform temperature, the thermostatic control insures starting and stopping

(Continued on Page 15, Column 1)

AS RECORD SALES YEAR

H. A. Lewis

(Continued from Page 14, Column 5)

only when there is temperature change, and they have practical, sanitary 2-stream, mound-building projectors.

Two new cooling units, one having two 21-cube trays and the other having three 21-cube trays, have been added to the line.

New, portable ice cream cabinets, with two, three and four holes, which were displayed for the first time at the Dairyman's Convention, Toronto, Canada, October 21 to 26, maintain a correct temperature for ice cream storage by using a new thermostatic control. Tops of cabinets are chromium-plated, while side panels are of black lacquer, rust-proof body metal. Model L-M 20 compressor unit, with ¼ h. p. motor, is used with the ice cream cabinets.

Much of the credit for the development of ice-o-thermic tubes and other refinements in the new 1930 line of Kelvinator refrigerators is said to be due to the personal efforts of George W. Mason, president of the company. Mr. Mason joined Kelvinator on January 29, 1929, less than a year ago, but he brought with him a wealth of ideas accumulated during his previous successful experience in the industry. Members of the organization frequently find occasion to express their gratification that the leadership of the business is in the hands of a man who knows the product and its market so thoroughly.

Directing Sales and Financial Policies

J. S. Sayre

Another phase of Kelvinator progress and one which reflects great credit to Mr. Mason is the remarkable improvement in the financial status of the company. A year ago the balance sheet showed a deficit of some four hundred thousand dollars, while the end of the first nine months of 1929 revealed a profit of a million and one-half dollars.

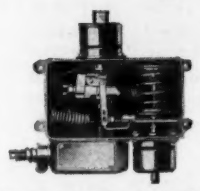
H. W. Burritt

Furthermore, all bank loans were paid in full. The 1930 operations are already completely financed, putting the company in a very strong position to carry out an aggressive program of production and sales.

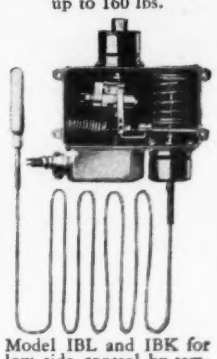
Howard A. Lewis, treasurer of the Kelvinator Corporation, is rated as a veteran in the organization, although he is comparatively new as the head of the finance operations. Mr. Lewis is largely responsible for the greatly expanded foreign business and still directs the destinies of the export division.

(Concluded on Page 16, Column 3)

THIS MERCOID especially designed for multiple hook-ups and Ice Cream Cabinets



Model IBA for low side control by pressure. Adjustable range—any cut-in or cut-out points between 25 inches vacuum and 25 lbs. pressure. High side cut-out—adjustable for pressures up to 160 lbs.



Model IBL and IBK for low side control by temperature. Adjustable range—IBL any cut-in or cut-out points from plus 10° to 70°. IBK from minus 30° to plus 60°. High side cut-out—adjustable for pressures up to 160 lbs.

THIS DUAL MERCOID provides low side control and high side cut-out in one instrument. Thousands are in use on multiple hook-ups, ice cream cabinets, milk coolers, and in general commercial work. Can be used with Methyl Chloride or Sulphur Dioxide or any non-corrosive low pressure refrigerant.

The Mercoid dual control can be furnished for either pressure or temperature control of low side. Adjustable over a wide range to furnish "cut-in" and "cut-out" at any desired pressure or temperature. A new feature allows the raising or lowering of the cut-in pressure without changing the cut-out point. Units can thus be changed to operate for longer or shorter periods without lowering the minimum temperature. A great saving in time at installation.

These controls operate with the well-known Mercoid switch — no exposed arc — no corrosion of contacts —and the control carries full line current, either 110 or 220 volts.

Write today for complete information on these instruments and the Solenoid Valve for water-cooled units.

AMERICAN RADIATOR COMPANY

Accessories Division, Dept. MER-9
40 West 40th Street, New York, N.Y.

Boring a Hole

At the recent Kelvinator distributors' convention, G. M. Evans, general works manager, explained the difficulties of boring a round hole. Yet it is one of the fundamental problems in mechanical production.

To get it round is more or less easy. To make it the right size is fairly easy. To get it where you want it is also more or less easy. But try to meet all three requirements—make it round, the right size and in the right place—this is precision manufacturing.

KEROTEST COMPLETES ADDITION TO PLANT

Pittsburgh, Pa.—The Kerotest Mfg. Co. have just completed extensive additions to their plant, practically doubling their brass department, rough and finished store room and shipping floor. They manufacture forged brass valves, fittings, manifolds, and connections for the electric refrigeration industry.

J. S. Forbes, Treasurer, states that their business has more than tripled during the past six years. They are constantly developing new products to keep apace with the rapid strides made by the electric refrigeration industry as a whole. A very novel feature employed in their packless valves, is the use of monel metal diaphragm, flexed to assume a normal position without strain when the valve is in the entirely open position, as is the case in 364 days of the year on most all service valves. This diaphragm is employed only to withhold the pressures between the completely open and completely closed position, as they combine the novel feature of a double shut-off in addition to the packless diaphragm construction, and form a metal to metal joint on both the back and forward seats of the stem.

According to Mr. Forbes, the Kerotest Co. pioneered the manufacture of apartment manifolds, made on square outside and round inside seamless brass tubing with compact angle needle-type valves screwed and soldered into ports placed 2 inches apart.

ELECTROLUX ADVERTISING WILL TOTAL $1,000,000

(Concluded from Page 1 Column 4)

present EL-4. Priced at $195.00 f.o.b. Evansville, it is sure to be a popular model.

"In 1930 we will operate with the same type organization as used during the past year. Supervisors, district managers, and special sales representatives will continue their work as formerly, supplemented with a new corps of sales engineers working under the service promotion department."

Additional News of Electrolux meeting in next issue

The Imitation Food Products Co.

(Branch of The Artistic Production Co.)

107 Lawrence Street
Brooklyn, N. Y.

Ask for our catalog of May 1, 1929. Many new items. Greatly reduced prices. Direct sales only. "Indispensable with refrigerator display."

For Automatic Refrigeration Manufacturers

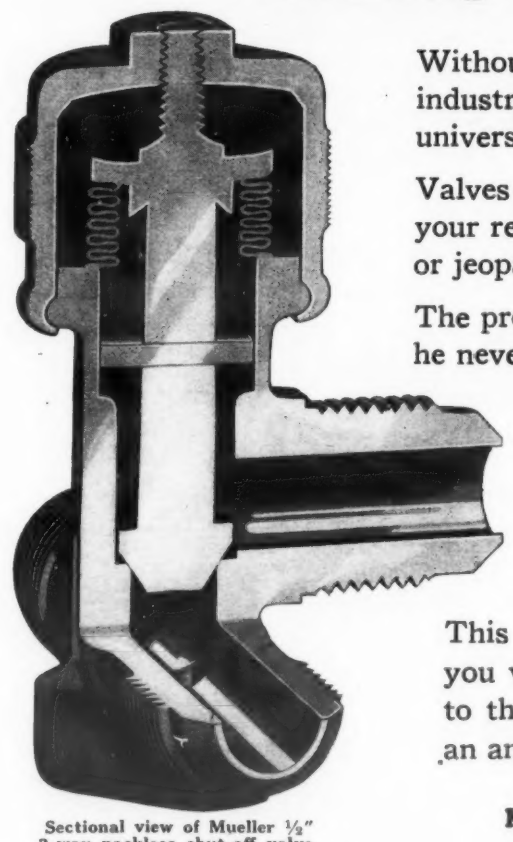
Whatever you require in copper, brass, bronze, or copper alloys, we are prepared to furnish on contract either parts or sub-assemblies ready for installation in your unit. Boilers, compression nuts, filters, float-balls, condensers, special nipples, bellows and thermostats, and a large variety of other standard parts. Let us quote on your requirements.

Bridgeport Brass Co.

General Motors Building
Detroit, Mich.
General Offices and Plant
Bridgeport, Conn.
Offices in Principal Cities

"Bridgeport" TRADE MARK REG. U.S. PAT. OFF.

Mueller Forgings Are Vital to the Building of Refrigeration



Sectional view of Mueller ½" 3-way packless shut-off valve. Catalog No. A-11053.

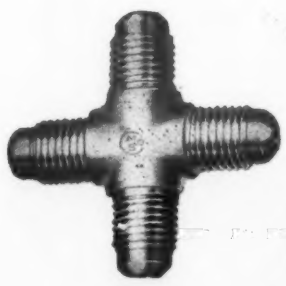
Without brass forgings the mechanical refrigerating industry could not have progressed to the position of universal use it enjoys today.

Valves and fittings to a great extent determine whether your refrigerator is safe or unsafe—they either protect or jeopardize the very lives of your ultimate customers.

The prospective purchaser of today is asking questions he never asked before. The technical side of the product formerly left to engineers is being closely scrutinized. Consumer education has brought about this changed condition.

Nothing less than the complete insurance which MUELLER forged brass fittings give should be offered to your customer. This one feature added to your product will provide you with a most potent sales argument—an answer to the question every prospect has in his mind and an answer that he cannot challenge.

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago.



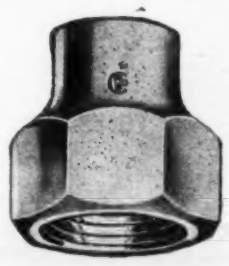
We manufacture a complete line of valves and fittings and can supply your every requirement.

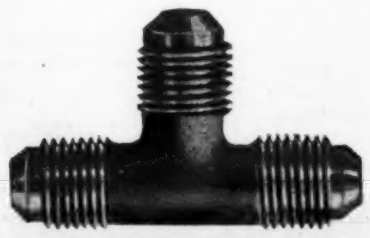
Send us samples or blue prints for quotations.

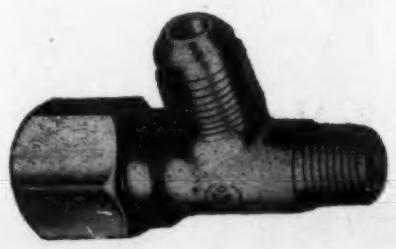
Mueller Brass Co.

PORT HURON, MICHIGAN

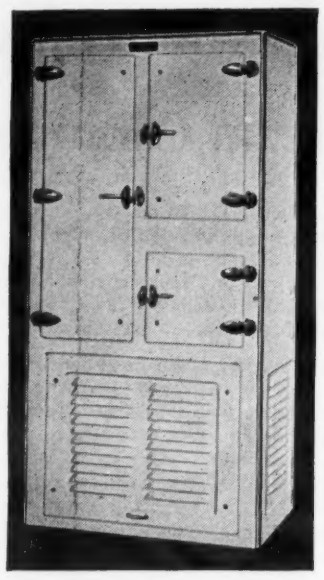
THREE GENERATIONS OF BRASS MAKING







"It was built by BOHN"



The name BOHN is our warranty that the finest materials obtainable have been utilized by skilled craftsmen and refrigeration engineers to build for you this beautiful and scientific product—an all-porcelain BOHN refrigerator.

BOHN installations include many of the leading hotels, restaurants and hospitals in America.

BOHN refrigerators are used exclusively on all Pullman-built railway dining and buffet cars.

The United States War Department has purchased hundreds of all-porcelain BOHN refrigerators for our army barracks and battleships.

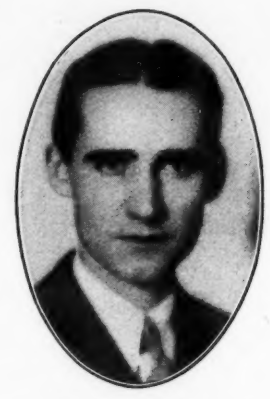
In choosing BOHN refrigerators, discriminating home owners throughout the country have given BOHN a representative list of which any manufacturer might be proud.

The handy base cabinet may either be used for refrigerating machinery or the storage of cooking utensils, canned goods, vegetables, etc.

Write for details of the remarkably low prices that are now prevailing.

BOHN REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

KELVINATOR MEN WHO



Vance Woodcox

Earl Lines

J. M. Fernald

(Concluded from Page 15, Column 3)

H. W. Burritt, vice-president and director of sales, is thoroughly familiar with his job—that of interpreting the distributor's, dealer's and consumer's point of view. Assisting him is J. S. Sayre, recently promoted to the position of sales manager.

Increased expenditures for advertising during the coming year will be handled by Earl Lines, director of advertising and sales promotion. The program includes national magazines, trade papers, newspapers, radio, outdoor and direct advertising, window displays and demonstrations.

Engineering and Production Departments

The improvements in the new Kelvinator line have, of course, been under the direct supervision of Chief Engineer Edward Heitman. Assisting him is C. C. Thomas, who has charge of the selection of materials.

G. M. Evans, general works manager, has the problem of maintaining quality and quantity and, at the same time, economy of production. G. V. Pollard, superintendent of inspectors, guards the operating processes, from the checking in of rough materials to the final testing of the finished product.

Wm. B. Walker, Jr., purchasing agent, has the task of assembling the lumber, steel, iron, copper, screws, washers, solder, wire, tin, rubber, enamel, bakelite, etc., which finds its way into Kelvinator cabinets and machines. His job is to know what to buy, where to buy it, and the proper price to pay.

E. A. Seibert, service manager, is overlord of installation work and directs the training schools. His function is to keep the customer satisfied.

J. M. Fernald, commercial sales manager; Vance Woodcox, domestic sales manager; Godfrey Strelinger, manager of branches; H. A. Sieck, in charge of ice cream cabinet sales; A. H. Jaeger, sales manager of the Leonard Refrigerator Company, Grand Rapids, Michigan, now a division of Kelvinator; and H. K. Lyons, manager of the order department, are among the executives who will carry forward the program for distributing a record-breaking volume of Kelvinator products during the coming year.

An important activity in the selling processes concerns time-payment financing, and this brings into the picture B. A. MacDonald, president, and C. M. Armstrong, manager, of ReDisCo., the installation payment financing organization of the Kelvinator Corporation.

HELPING *to* SELL REFRIGERATORS

WHY be content to feature your business front with window display alone for attracting trade, when a several times larger throng some distance away can be drawn by use of a fine electric sign?

Most productive of results, yet economical to own and operate, are Flexlume electrics—built in the largest sign plants in the world devoted exclusively to electrical advertising. Many exclusive features of construction, in designs that may be either

NEON TUBE

EXPOSED LAMP

OPLEX GLASS LETTER or

DESIGNS COMBINING THESE ILLUMINATIONS

Let us submit details and color sketch of an attractive display to exactly meet your requirements — absolutely no obligation. Address FLEXLUME CORPORATION, 3015 Military Road, Buffalo, N. Y.

FLEXLUME
ELECTRIC DISPLAYS

Factories at Buffalo, N. Y. and Toronto, Can.

SALES AND SERVICE OFFICES IN CHIEF CITIES OF U. S. AND CANADA

BURRITT TO TALK OVER BIG RADIO HOOK-UP

Detroit, Mich.—A nation-wide hook-up for forty radio stations, located throughout principal cities in the United States, will broadcast an announcement of Kelvinator's 1930 line, Friday evening, Nov. 22.

The program will occupy fifteen minutes and will be featured by a talk on the new products by H. W. Burritt, vice-president and director of sales. His speech will contain an announcement of the introduction of the new Kelvinator models and of the Ice-O-Thermic tubes with which they are equipped. These tubes, which permit automatic freezing, require no regulation or attention from the operator. Mr. Burritt will extend an invitation to the public to see the new Kelvinator models, some of which have ice-making capacities of 35 pounds. He will also call attention to the double-page spread which is to appear in the Nov. 23 issue of Saturday Evening Post, showing many of the new models.

Charles Magnentes, accordian artist, and Sam Herman, xylophone performer, will also be on the Kelvinator radio program.

COOKE ANNOUNCES NEW REPLACEMENT SEAL UNIT

An accessory replacement seal unit for refrigerating machines is now being marketed by Cooke Seal Ring, 30 N. Green St., Chicago, Ill. This seal works on the ground joint principle, the ground joint being formed against the end plate or seal cap.

The seal revolves with the shaft and is bound frictionally tight to the shaft by means of resilient friction rings compressed in the housing of the seal by action of the spring.

BEST PROSPECTS IN $2,500 TO $3,000 INCOME CLASS

According to a recent survey of Frigidaire's deferred payment business, it was found that people of moderate means are the heaviest purchasers of electric refrigerators for the home, according to E. G. Biechler, president and general manager. The survey included a study of more than 11,000 sales, made in all parts of the country, in which the extended payment basis was used. One-third of these buyers reported incomes of $2,500 a year or less, and considerable more than half had incomes of not more than $3,000 a year.

This situation offers a marked contrast to sales of two years ago, when only one-third of Frigidaire's time-payment business came from people with incomes of $3,000 a year or less. Because of the results of this survey, which emphasized the tremendous popularity of the deferred payment plan, Frigidaire Corp. has put into effect a still more liberal policy for people desiring to purchase out of their incomes. This policy practically permits purchasers to install any model they prefer on terms best suited to their personal budgets.

SELF-CONTAINED AIR COOLER MADE BY YORK

York Heating and Ventilating Corp., 1541 Sansom St., Philadelphia, Pa., is manufacturing the York air-cooling unit which is a self-contained combination of welded steel coil heat transfer surface, full housed centrifugal fan, and direct connected motor and casing. This unit, through air circulation, maintains uniform temperature in all parts of a room. Cooling units in capacities of 2,500, 5,000 and 10,000 cu. ft. of air per minute are offered.

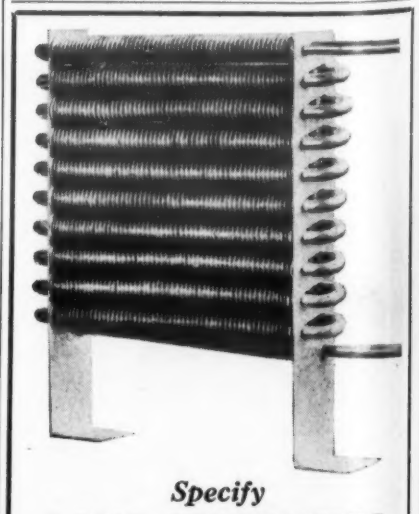
KANSAS CITY UTILITY TO SELL GENERAL ELECTRICS

Kansas City, Mo.—Glueck & Co., distributor of General Electric refrigerators, has appointed Kansas City Power and Light Company as dealer here. General Electric refrigerators are now handled in the four stores of the power and light company in greater Kansas City, the large store in connection with general offices at Fourteenth St. and Grand Ave., the North Kansas City, Country Club Plaza and Overland Park stores.

RUBBER PRODUCTS

Engineering experience, laboratory and production facilities for the development and manufacture of hard and soft rubber products for refrigerator cabinets, equipment accessories and insulation parts.

THE AETNA RUBBER CO.
ASHTABULA, OHIO



Specify
ROME CONDENSERS

Made of heavy gauge deoxidized seamless copper tube. One piece construction.

Designs for all requirements.

Rome-Turney Radiator Co.
ROME, N. Y.

ARE SPEEDING UP PRODUCTION AND SALES

B. A. MacDonald

C. M. Armstrong

Edward Heitman

G. M. Evans

Wm. B. Walker, Jr.

C. C. Thomas

A. H. Jaeger

H. A. Sieck

E. A. Seibert

Godfrey Strelinger

H. K. Lyons

R. A. Lundquist

G. V. Pollard

WASHINGTON SHOW TO EMPHASIZE NEED OF APPLIANCES IN HOMES

Washington, D. C.—Nineteenth Annual Exposition of Food, Radios and Household Electrical Appliances will be held in Washington auditorium, January 8-18, 1930.

The exhibits, given under the auspices of United Food Stores, Inc., and Retail Grocers' Protective Association, will cover 50,000 square feet of floor space. The Retail Grocers' Protective Association is affiliated with the National Association of Retail Grocers. The United Food Stores, Inc., is a chain of independently owned groceries, and is one of the largest group of chain stores in Washington.

Cooking schools will be held daily for housewives, and samples of food products will be given visitors. A musical program will furnish entertainment throughout the exposition.

An assortment of household appliances, refrigerators, vacuum cleaners, washing machines, and other electrical devices, will be on display at the Household Electrical Appliances exhibit.

Food, Radio and Electrical Appliances shows will be separate entities, but only one admission will be charged for the three of them. S. Lovenbein is handling the business end of the exposition.

DISTRIBUTOR SEEKS SHARE IN CHRISTMAS DOLLAR

Cleveland, Ohio—William F. Gray, Inc., Frigidaire distributors, started the first of November with an intensive Christmas sales campaign, according to R. D. Russell, sales manager. About 10,000 pieces of direct mail obtained from the factory are being sent out with their own letter to active prospects and people in the most thoroughly worked territories.

In addition to this the factory is mailing a three-piece campaign to a list of 4,500 persons in the Cleveland district. Both personal and mail appeals are being built around the fact that an electric refrigerator is a worthy Christmas present, not in the class of the vacuum cleaner or washing machine, which the housewife resents as a present, since it is only a device to cause her more work.

The electric refrigerator is being placed in the class of the piano, radio, and similar luxuries which make their presence felt throughout the year and cannot be misplaced or forgotten because of its constant service, health insurance and enjoyment.

Thirty carloads of refrigerators are coming into the Cleveland warehouse for this anticipated Christmas business. Deliveries to homes are being planned as close to Christmas day as possible.

Electric Refrigeration Distributors and Dealers

You need the PEERLESS line of compressors.

PEERLESS units give you a COMPLETE line, ranging from one to ten tons.

PEERLESS Perfected Multiple Apartment System is recognized leader in its field. Full details given on request. Our record warrants your most exacting investigation.

PEERLESS ICE MACHINE CO.
515 W. 35th St.
CHICAGO, ILLINOIS

BOSTON MEN DISCUSS COOPERATIVE SELLING

Boston, Mass.—Frigidaire Sales Company held a sales meeting recently at the Copley Plaza Hotel at which sixty sales representatives of Boston electric light companies were present. The purpose of the meeting was to draw up cooperative sales plans between the Frigidaire Company and the electric light companies.

H. W. Newell, manager of the Frigidaire Company of Boston, presided at the meeting. He spoke on methods that might be employed to stimulate sales in the community. Other speakers at the meeting included John Pfeil, Frigidaire, Boston; H. E. Gilbert, Dayton, Ohio; Richard Lincoln, Boston Edison Co.; R. M. Miller, Cambridge Electric Co.; Charles Leary, Weymouth Light & Power Co.; Ralph Secord, Quincy Light & Power Co.; and Chester Eaton, Charles H. Tenney Co.

HARLOFF-LOPRICH DEALERS MEET AT MADISON

Madison, Wis.—About 50 representatives attended a convention for Kelvinator dealers of southern and central Wisconsin, held November 6 under the auspices of Harloff-Loprich Electric Co.

The convention was addressed by Fred Foersterling and Scott Silliman, both from Kelvinator factory, Detroit, Mich.; also by Alfred Meinke, in charge of service department, Harloff-Loprich Co., and by William Ounsworth, territory representative of the same concern. During a banquet given at 6:00 p. m., each dealer introduced himself and gave a short talk on experiences with Kelvinator units. The convention, at which Kelvinator's 1930 line was displayed, was presided over by Otto Harloff, president of the local company.

What Secret is locked within the walls?

INSIDE the walls of every mechanical refrigerator is locked a secret—a secret of insulation. Is it good, bad or indifferent?

On it depends economy of operation and constant temperature.

Those manufacturers who are using Balsam-Wool Sealed Slabs *know* that they are getting the maximum of insulation. And at low cost.

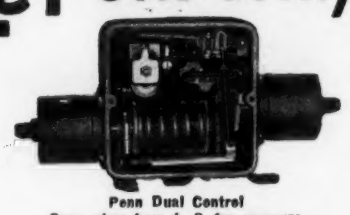
These slabs are made of Balsam-Wool—famous in the building industry as remarkable insulation—in a hermetically sealed, waterproof covering. Balsam-Wool has an average thermal conductivity of not exceeding 6.0 B. t. u. per square foot, per 1" thickness, per 24 hours, per 1° Fahrenheit difference in temperature.

Made to any size specifications, Balsam-Wool Sealed Slabs combine the desirable features of both flexible and rigid insulations. If you are not familiar with this remarkable refrigerator insulant, write for a free sample slab at once.

WOOD CONVERSION COMPANY
Insulation Division of Weyerhaeuser Forest Products
Mills at Cloquet, Minnesota
Industrial Sales Offices: 360 N. Michigan Ave., Chicago
3107 Chanin Building, New York
938 National Press Building, Washington, D. C.
3084 West Grand Boulevard, Detroit, Michigan
Manufacturers of Balsam-Wool Insulation for Domestic Refrigerators, Motor Buses and Airplanes; Balsam-Wool Refrigerator Car Insulation and Steel Car Insulation; Balsam-Wool Standard Building Insulation

Balsam-Wool Sealed Slabs

Let One Compact Instrument do the work of Two



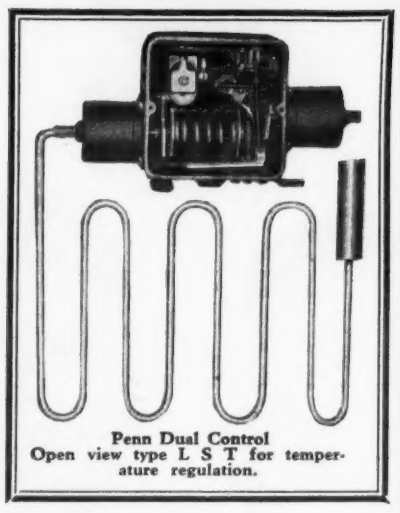
Penn Dual Control
Open view type L S for pressure regulation.

PENN *Dual* CONTROL

GOOD news for manufacturers of electric refrigerators. Out of the Penn Laboratories has come a new, highly perfected controlling device that performs the operations of two ordinary switches. The Penn Magnet Switch combines regular temperature or pressure control and safety cut-out into one compact unit. Yet the control and safety elements are entirely independent of each other. The high side of the control operates free of the low and adjustments in the low do not affect the high side.

This Penn Dual Control has been especially designed for both commercial and domestic refrigerators, multiple hook-ups, and general commercial work. It eliminates automatic starters that formerly were necessary on motors from ¼ to 1½ Horse Power. Employing the unique Penn Magnet Contacts, unusually sensitive to pressure and temperature changes, it is capable of handling loads up to and including 1½ Horse Power, Single Phase, Alternating Current and 1 Horse Power Direct Current, either 110 or 220 volts.

The safety mechanism may be supplied to cut-out at any desired pressure up to and including 185 lbs. The low side range is from 20 inches vacuum to 30 lbs. pressure. The operating differential may be varied from a minimum of 1½ lbs. to a maximum of 25 lbs.



Penn Dual Control
Open view type L S T for temperature regulation.

Send today for complete information on the Penn Dual Control and "Quick Freeze", the cold control attachment for electric refrigerators.

PENN ELECTRIC SWITCH CO.
DES MOINES, IOWA

An organization of proven engineering ability that supplies the largest and best concerns of the country with automatic control switches.

GET A BINDER for your File Copies of The News---$3.75 Each, Postpaid

Electric Refrigeration News
550 Maccabees Bldg. Detroit, Mich.

Webb Slingabouts will pay for themselves in a season. It will surprise you how they will slice delivery costs. Write us for further information. State the line you handle and we will be glad to quote prices. Charles J. Webb & Company, 116 Chestnut Street, Philadelphia, Pa.

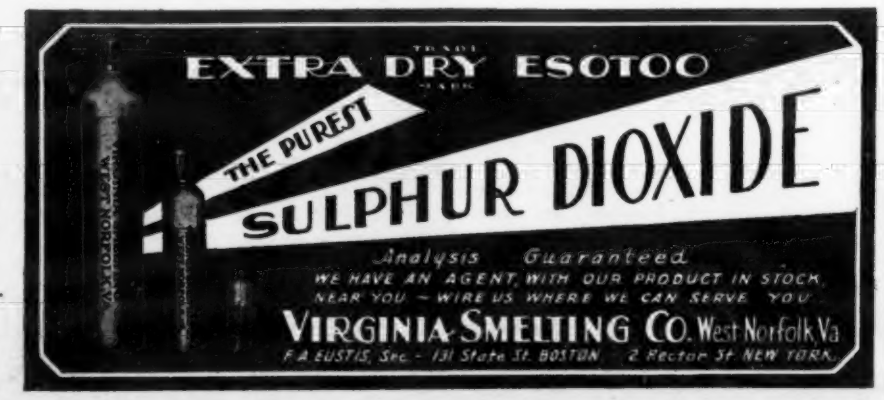
THE WEBB SLINGABOUT
provides a safe, easy passage through narrow doorways

THE MOST ticklish moment during the delivery of a refrigerator comes when it is being carried through narrow doorways and halls in the home of the purchaser. And that is the time when a Webb Slingabout comes in handy! For the Slingabout takes up less space than any crate possibly could and protects the refrigerators as well as the woodwork and walls of the house. Refrigerator dealers who use the Slingabout for their deliveries would not be without it for it has proved to them that it saves time, trouble and expense.

Here is the reason why. The jacket is made of extra tough canvas, wadded with a thick cotton padding, and lined with fine flannel that protects the brilliant luster of the refrigerator's beautiful finish. This jacket is quickly and easily thrown over the refrigerator. A harness made of triply reinforced belting secures the jacket and enables the movers to take hold without bruising knuckles.

You save a large fraction of your delivery costs. You do not have to spend money for crating. Loading and unloading is done in half the time. No adjustments for marred refrigerators or for damage done to customers' homes. No unpacking mess to clean up. Each Slingabout can be used over and over again—there are some which have moved as many as 700 machines.

WEBB *Slingabout*


TRADE
EXTRA DRY ESOTOO
MARK
THE PUREST
SULPHUR DIOXIDE
Analysis Guaranteed
WE HAVE AN AGENT WITH OUR PRODUCT IN STOCK NEAR YOU — WIRE US WHERE WE CAN SERVE YOU
VIRGINIA SMELTING CO. West Norfolk Va
F A EUSTIS, Sec. - 131 State St. BOSTON 2 Rector St. NEW YORK

LARGE DEPARTMENT STORES ADOPT "DIME STORE" SALES IDEAS

By William A. W. Hamilton

JUST how much the thirst of buyers has to do with the amount of merchandise purchased from one place is shown in the present policies of "high-brow stores" to institute "dime-store" practices.

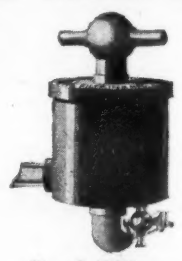
If, during an extended shopping tour, buyers become thirsty and find no convenient means of satisfying that thirst, they generally cease purchasing operations and stop at the nearest confectionery or drug store for a cold drink or beverage. They seldom return to the original buying base.

Because of this fact, many large, conservative stores have installed beverage counters, some of them portable, near their dry goods and merchandise centers. The result has been a 25 or 30 per cent increase of sales in the departments adjacent to the beverage counter. An official of Northwestern Railroad, who okayed the installation of four mechanically refrigerated counters in a depot, to serve drinks to patrons, said: "Nothing has ever pleased me more than the placing of those stands for the convenience of our patrons; that pleasure comes from seeing them satisfied with the cold drink they have just taken." He added, regarding the number of counters to be installed, "Put them everywhere except on the tracks."

Men who operate on the floor of the Stock Exchange, Board of Trade, or Banker's Row, appreciate a cold drink of orange or fruit juice just as much as sweating laborers. This is proved by the beverage counter which is located at the corner of Clark and Madison Streets, Chicago, Ill., where 600 gallons of orange juice have been sold during a single day.

The beverage counter is a benefit to the entire field of electric refrigeration besides being a paying proposition in itself. Shoppers, laborers and business men are influenced by the convenience and satisfaction of the cold drinks and are thus favorably disposed prospects for electric refrigerators.

FILTERS ARE DESIGNED FOR ALL WATER COOLERS



No. 3 Filter

Filtrine Mfg. Co., 53 Lexington Ave., Brooklyn, N. Y., manufactures filters for all makes of electric water coolers. These filters are designed so that they may be placed either in the cabinet, or inserted in the plumbing adjacent to the cooler.

Filtrine refrigerator filters are suitable for use with water-cooling equipment attached to domestic refrigerators. They are small in size and can be obtained with or without faucets. Filtrine also makes a line of filters for water used in water-cooled condensers.

PROFITS AND LOSSES FOR RETAIL HARDWARE STORES

Of 1,267 retail hardware stores reporting 1928 business facts to the National Retail Hardware Association, 820 showed a profit and 447 a loss for the year; 283 stores were located in towns of less than 1,000 population, and, of this number, 191 showed a profit and 92 a loss. In towns of from 1,000 to 3,500, there were 364 stores reporting, of which number 235 showed a profit and 129 a loss; in towns of 3,500 to 10,000, 165 stores showed a profit and 71 a loss; in towns of from 10,000 to 50,000, 130 showed a profit and 89 a loss; and in towns of over 50,000, 99 showed a profit and 66 a loss. Altogether there were 223 stores reporting sales of less than $25,000; 287 with sales of from $25,000 to $40,000; 294 with sales of from $40,000 to $60,000; 261 with sales of from $60,000 to $100,000, and 202 with sales of over $100,000.

Total earnings on sales for that year averaged 3.67 per cent; operating profit was 2.22 per cent; cash discounts and other earnings 1.45 per cent; and profit on investments, which included all earnings of the business, was 7.96 per cent. There were 437 stores which reported in each of the last five years. Of these stores, the 1928 profit on investments amounted to 7.68 per cent, while in 1927 it was 7.38 per cent; in 1926, 7.89 per cent; in 1925, 9.55 per cent, and in 1924, 9.38 per cent.—*Trends and Indications.*

"Keep It Clicking"

Cover of the program for the recent central station conference held by the General Electric Co. Refrigeration Dept. in Cleveland. It effectively suggested the key purpose of the meeting.

LARKIN ANNOUNCES 100% VERTICAL SURFACE COIL

Larkin-Warren Refrigerating Corp., Atlanta, Ga., announces a new 100 per cent vertical surface coil for dry expansion.

This coil is constructed on the principle that the thickness of frost accumulation is in inverse ratio to the coil surface area. A 100 per cent vertical coil surface, as provided in Larkin coils, means that the total area of the coil surface exposed to the circulating air in the refrigerating chamber is equal to the total outside area of that chamber.

For instance, a meat cooler 8 by 6 by 10 feet in dimension would have a total outside area of 376 feet, and a Larkin coil for that cooler would have 376 square feet of vertical coil surface. With the larger refrigerating surface, it is possible to maintain a room temperature of 35 degrees with a temperature of only 33 degrees on the surface of the aluminum plates or fins.

At 33 degrees frost cannot form; therefore, defrosting is unnecessary and dehydration does not take place, as moisture stands continually on the plates or fins and natural air circulation, due to the slight temperature variations between coil and surface, returns the moisture to all parts of the chamber.

Yours is a splendid magazine and I eagerly await the arrival of each issue. —Norman E. Schollin, General Electric Co., Schenectady, N. Y.

FOREIGN SHIPMENTS OF ELECTRIC REFRIGERATORS

September Exports Reported by Bureau of Foreign and Domestic Commerce

Country	Units Up To ¼ Ton Capacity		Units Over ¼ to 1 Ton Capacity	
Destination	No.	Value	No.	Value
Austria	19	5,156	...	.....
Belgium	36	9,611	...	.....
Denmark	58	6,332	2	437
Finland	....	.....	12	5,520
France	152	25,329	...	.....
Germany	332	34,968	...	.....
Italy	37	8,046	...	.....
Netherlands	89	13,212	1	.....
Norway	2	390	...	102
Poland and Danzig	15	2,496	...	.....
Portugal	2	1,094	12	2,380
Soviet Russia in Europe	....	.....	1	1,025
Spain	82	14,406	...	.....
Sweden	89	9,255	34	4,804
Switzerland	10	1,410	...	.....
United Kingdom	289	40,616	...	.....
Canada	579	98,794	89	23,391
British Honduras	1	211	...	.....
Costa Rica	9	1,555	...	.....
Guatemala	21	5,924	4	1,464
Honduras	.....	.....	1	425
Nicaragua	2	816	...	.....
Panama	34	8,178	...	.....
Salvador	2	8,178	...	.....
Salvador	2	355	...	.....
Bermudas	1	125	...	.....
Barbados	2	405	...	.....
Jamaica	4	834	...	.....
Other British West Indies	11	2,028	...	.....
Cuba	79	12,559	39	11,219
Dominican Republic	5	662	...	.....
Netherland West Indies	19	4,471	...	.....
Haiti, Republic of	3	655	...	.....
Virgin Islands of U. S.	....	.....	1	379
Argentina	258	52,264	17	4,067
Bolivia	....	.....	1	346
Brazil	260	45,047	25	3,512
Chile	5	727	56	7,784
Colombia	51	8,713	...	.....
Ecuador	4	945	...	.....
Peru	27	3,775	...	.....
Uruguay	130	20,029	...	.....
Venezuela	37	6,483	3	317
British India	152	20,931	72	11,697
British Malaya	6	1,074	8	1,749
Ceylon	13	2,313	...	.....
China	10	1,410	...	.....
Java and Madura	10	1,521	...	.....
Other Netherland East Indies	1	375	...	.....
French Indo-China	33	4,796	...	.....
Hong Kong	6	1,440	3	499
Japan	1	300	1	135
Philippine Islands	128	15,550	23	4,669
Australia	399	59,843	385	64,375
New Zealand	71	10,231	175	29,039
Union of South Africa	243	51,914	2	520
Gold Coast	4	513	...	.....
Nigeria	1	179	...	.....
Other British West Africa	6	769	...	.....
Egypt	3	760	...	.....
Algeria and Tunisia	70	9,347	...	.....
Morocco	6	935	...	.....
Canary Islands	1	320	...	.....
Total	4,068	$660,038	974	$182,221
Shipments to Hawaii	201	$38,478	5	$1,979
Porto Rico	62	$11,239	4	$686

KITCHEN NO LONGER DRUDGE SHOP

"Evolution of the kitchen, from a drudge shop to a friendly institution, has come about because of the many inventions that lessen work," according to an article which appeared in the October issue of *duPont Magazine*. "One piece of equipment that seldom has a vacation is the refrigerator; its doors are opened, not only in preparation for meals, but for lunches in between, after school and after movies."

CODE HEARING TO BE HELD IN PORTLAND

Portland, Ore.—The city council will meet at 2:00 p. m., Wednesday, November 20, for a public hearing on the ordinance proposed to govern installations of electric refrigerators in apartment buildings.

The proposed ordinance has been approved by local refrigerating concerns.

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KULAIR FREEZING UNITS FOR ALL MAKES OF FIRST CLASS HOUSEHOLD CABINETS

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For domestic, apartment, self-contained cabinets, and multiple unit installation.

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OPERATE WITH ANY CONDENSING UNIT
Employing Sulphur Dioxide, Methyl Chloride, Ethyl Chloride, Butane, Isobutane or other refrigerants.
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KULAIR CORPORATION PHILADELPHIA, PA.

Safety Plan for Multiple Systems Demonstrated in Chicago

E. T. WILLIAMS SHOWS HOW TO COMPLY WITH KEGEL STANDARD

Alderman and Club Women Witness Test; Horn Warns of Refrigerant Leakage

Chicago, Ill.—The safety system for multiple installations of refrigerating systems designed by E. T. Williams, consulting engineer of Servel, Inc., to meet the safety standard set up by Dr. Arnold H. Kegel, health commissioner of Chicago, was demonstrated to the Health Committee of the Chicago City Council at the Chicago Avenue pumping station, November 6. Opinions of engineers and officials differ as to the practicability of the system. Dr. Kegel takes the position that the apparatus is a practical answer to his "safety yardstick." Engineers of the Special Industry Committee, which has had numerous conferences with the Chicago officials during the past several months, were inclined to pick flaws in the scheme.

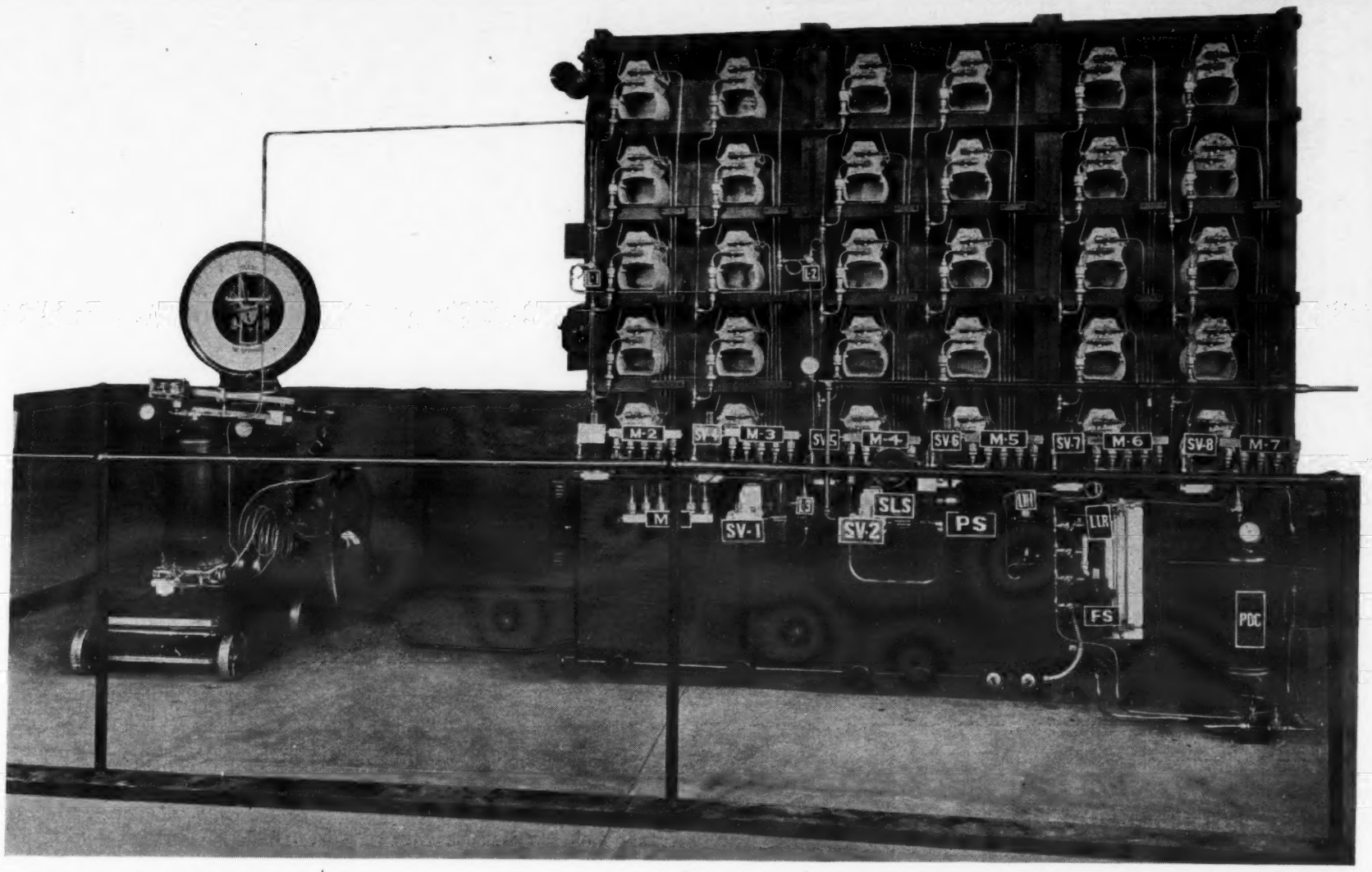
Women See Demonstration

Among those witnessing the demonstration were Mrs. Edward H. Ochsner, of the Women's Auxiliary of the Chicago Medical Society; Mrs. Clarence Holtzman, health chairman of the Chicago Women's Clubs; Mrs. A. H. Brumbach, of the Women's Auxiliary of the Chicago Medical Society; Mrs. Bessie Bragg Pierson, and Mrs. William Westerund, of the Illinois Women's Athletic Club.

A picture of the equipment used in the demonstration is shown herewith, together with a diagram of the connections. The photograph does not show the one-ton Peerless machine, which is used to cool the thirty Peerless evaporators. The small Servel model 50-A unit, shown back of the scale, is an auxiliary device required only for the test, in which leakage from various points in the system was accurately weighed.

Above the basement the system is essentially the same as any ordinary multiple installation except that each liquid line leading to each evaporator has a check valve, and the suction lines are of the manifold type, with the liquid lines of the riser type. Each manifold has a solenoid shut-off valve, which closes when the safety device operates in the liquid limiting receiver.

Only eighteen pounds of methyl chloride were used in the thirty evaporators. Mr. Williams stated that the system should be feasible up to forty-five evaporators. A more detailed description of the system is given in the drawing reproduced below.



CHICAGO CODE MEETING

(Concluded from Page 1 Column 5)

urged that his code should be accepted as the one best suited to the situation.

It was agreed that the members of the committee would be given copies of the proposed national code, with the changes mentioned, for comparison with the Gearon ordinance so that the Health Committee might reach a decision within ten days.

Health Commissioner Kegel has issued a 24-page pamphlet summarizing the evidence and argument concerning the proposed refrigeration ordinance which he submitted to the Health Committee. T. G. Essington, counsel for the special industry committee, submitted a 13-page mimeographed brief in reply to Dr. Kegel's summary of evidence and argument.

(Note.—Further details regarding these documents will be published in the next issue of the NEWS.)

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Plant and Offices—Arlington, Baltimore, Maryland

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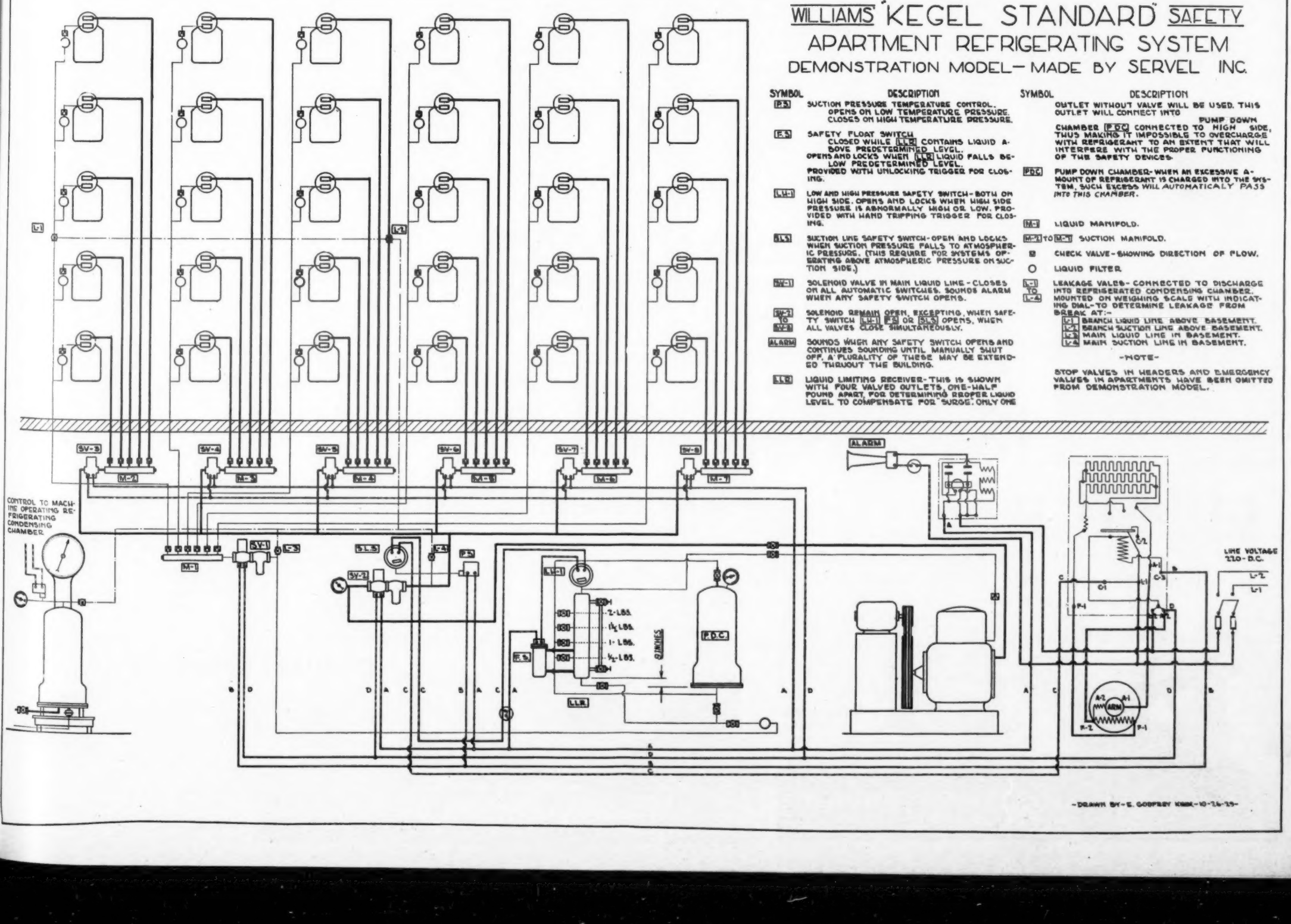
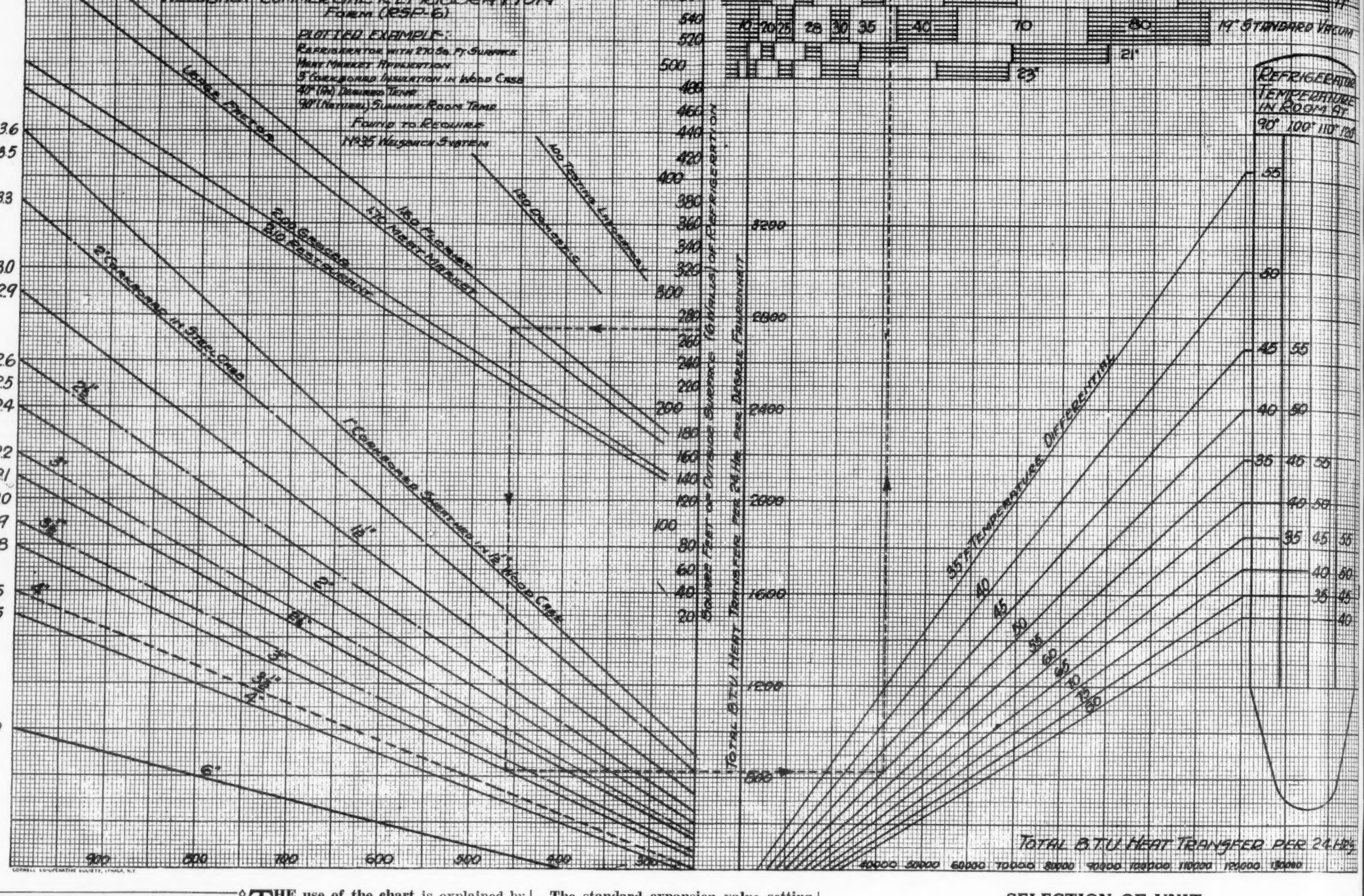
Testing and experimental laboratory service for Manufacturer, Distributor, Central Station — Test data exclusive property of client
ELECTRICAL TESTING LABORATORIES
80th Street and East End Avenue, NEW YORK CITY, N. Y.


WILLIAMS "KEGEL STANDARD" SAFETY
APARTMENT REFRIGERATING SYSTEM
DEMONSTRATION MODEL—MADE BY SERVEL INC.
SYMBOL DESCRIPTION
PS SUCTION PRESSURE TEMPERATURE CONTROL. OPENS ON LOW TEMPERATURE PRESSURE. CLOSES ON HIGH TEMPERATURE PRESSURE.
FS SAFETY FLOAT SWITCH CLOSED WHILE LLR CONTAINS LIQUID ABOVE PREDETERMINED LEVEL. OPENS AND LOCKS WHEN LLR LIQUID FALLS BELOW PREDETERMINED LEVEL. PROVIDED WITH UNLOCKING TRIGGER FOR CLOSING.
LW-1 LOW AND HIGH PRESSURE SAFETY SWITCH - BOTH ON HIGH SIDE. OPENS AND LOCKS WHEN HIGH SIDE PRESSURE IS ABNORMALLY HIGH OR LOW. PROVIDED WITH HAND TRIPPING TRIGGER FOR CLOSING.
SLS SUCTION LINE SAFETY SWITCH - OPEN AND LOCKS WHEN SUCTION PRESSURE FALLS TO ATMOSPHERIC PRESSURE. (THIS REQUIRE FOR SYSTEMS OPERATING ABOVE ATMOSPHERIC PRESSURE ON SUCTION SIDE.)
SV-1 SOLENOID VALVE IN MAIN LIQUID LINE - CLOSES ON ALL AUTOMATIC SWITCHES. SOUNDS ALARM WHEN ANY SAFETY SWITCH OPENS.
SV-2 TO SV-8 SOLENOID REMAIN OPEN, EXCEPTING WHEN SAFETY SWITCH LW-1 FS OR SLS OPENS, WHEN ALL VALVES CLOSE SIMULTANEOUSLY.
ALARM SOUNDS WHEN ANY SAFETY SWITCH OPENS AND CONTINUES SOUNDING UNTIL MANUALLY SHUT OFF. A PLURALITY OF THESE MAY BE EXTENDED THROUGHOUT THE BUILDING.
LLR LIQUID LIMITING RECEIVER - THIS IS SHOWN WITH FOUR VALVED OUTLETS, ONE-HALF POUND APART, FOR DETERMINING PROPER LIQUID LEVEL TO COMPENSATE FOR "SURGE". ONLY ONE
SYMBOL DESCRIPTION
OUTLET WITHOUT VALVE WILL BE USED. THIS OUTLET WILL CONNECT INTO PUMP DOWN CHAMBER PDC CONNECTED TO HIGH SIDE, THUS MAKING IT IMPOSSIBLE TO OVERCHARGE WITH REFRIGERANT TO AN EXTENT THAT WILL INTERFERE WITH THE PROPER FUNCTIONING OF THE SAFETY DEVICES.
PDC PUMP DOWN CHAMBER - WHEN AN EXCESSIVE AMOUNT OF REFRIGERANT IS CHARGED INTO THE SYSTEM, SUCH EXCESS WILL AUTOMATICALY PASS INTO THIS CHAMBER.
M-1 LIQUID MANIFOLD.
M-2 TO M-7 SUCTION MANIFOLD.
CHECK VALVE - SHOWING DIRECTION OF FLOW.
LIQUID FILTER.
L-1 TO L-4 LEAKAGE VALVES - CONNECTED TO DISCHARGE INTO REFRIGERATED CONDENSING CHAMBER. MOUNTED ON WEIGHING SCALE WITH INDICATING DIAL - TO DETERMINE LEAKAGE FROM BREAK AT:-
L-1 BRANCH LIQUID LINE ABOVE BASEMENT.
L-2 BRANCH SUCTION LINE ABOVE BASEMENT.
L-3 MAIN LIQUID LINE IN BASEMENT.
L-4 MAIN SUCTION LINE IN BASEMENT.
-NOTE-
STOP VALVES IN HEADERS AND EMERGENCY VALVES IN APARTMENTS HAVE BEEN OMITTED FROM DEMONSTRATION MODEL.
SV-3
SV-4
SV-5
SV-6
SV-7
SV-8
M-2
M-3
M-4
M-5
M-6
M-7
M-1
SV-1
L-3
SLS
SV-2
L-4
PS
LW-1
2-LBS.
1½-LBS.
1-LBS.
½-LBS.
6 INCHES
P.D.C.
F.S.
LLR
CONTROL TO MACHINE OPERATING REFRIGERATING CONDENSING CHAMBER
ALARM
LINE VOLTAGE 220-D.C.
L-2
L-1
DRAWN BY-E. GODFREY KNOX-10-26-29-

Welsbach Graphic Selector Simplifies Commercial Job Estimates


GRAPHIC SELECTOR
For
WELSBACH COMMERCIAL REFRIGERATION
Form (RSP-6)
PLOTTED EXAMPLE:
Refrigerator with 270 Sq. Ft. Surface
Meat Market Application
3" Corkboard Insulation in Wood Case
40° (hp) Desired Temp.
90° (Normal) Summer Room Temp.
Found to Require
No. 35 Welsbach System
Condensing Unit Capacity – Based on 16 Hr. Daily Run
17" Standard Vacuum
Refrigerator Temperature in Room at
Difference
35° Temperature Difference
B.T.U. Heat Transfer per Square Foot per 24 Hr. per Degree Fahrenheit
Total B.T.U. Heat Transfer per 24 Hrs.
Square Feet of Surface
Total B.T.U. Heat Transfer per 24 Hrs. per Degree Fahrenheit
Corbell Cooperative Society, Ithaca, N.Y.

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Full Capacity

With Every Unit

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THE use of the chart is explained by the plotted example at the top left center, following the plotted line from its beginning at the left center scale.

Caution: Avoid error through confusion of heat transfer value of corkboard sheathed in wood cases and corkboard in all-steel refrigerators.

Standard super freezer evaporators have a width and a height of approximately 3½" for each row, and a length (due to return bends) 8" greater than the finned length. In other words, a 40-foot evaporator 5 rows wide, 2 rows high, with 4' 0" finned length, would be approximately 17½" wide, 7" high, and 4' 8" long. When bunker space permits, the height of super freezer evaporators should be limited to 2 rows.

The standard expansion valve setting for Welsbach systems is 19" vacuum, as emphasized by the indexed scale at the top right of the chart. Lowering the vacuum (as from 19" to 17") increases the capacity of the condensing unit approximately 10% for each 1", but at the same time increases the motor load beyond its allowable limit, and greatly increases the requisite length of the evaporator, as shown in the table below. Raising the vacuum (as from 19" to 21") decreases the capacity of the condensing unit, but also decreases the requisite length of the evaporator. Raising the vacuum from 19" standard is necessary when unusually low temperatures must be produced, but obviously destroys the assurance of self-defrosting characteristics.

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196 MILWAUKEE STREET, MILWAUKEE, WISCONSIN

SELECTION OF UNIT

Vacuum Setting	Refrig. Temp.	Condensing Unit No. 10	No. 20	No. 25	No. 28	No. 30	No. 35	No. 40	No. 70	No. 80
17" SPECIAL	35°	30	40	49	71	84	107	141	213	282
	40°	21	28	34	49	58	74	97	147	194
	45°	16	21	26	37	44	56	74	112	148
	50°	13	17	21	30	35	45	60	90	120
	55°	11	15	18	25	30	38	50	76	100
19" STANDARD	35°	15	20	24	35	40	53	70	106	140
	40°	12	16	19	28	31	42	55	83	109
	45°	10	13	15	23	26	34	45	68	90
	50°	8	11	13	19	22	29	38	58	75
	55°	7	10	12	17	19	25	33	50	66
21" SPECIAL	35°	8	11	13	19	22	30	39	59	77
	40°	7	9	11	16	19	25	33	49	65
	45°	6	8	10	14	16	21	28	42	56
	50°	5	7	8	12	14	19	25	37	49
	55°	5	6	7	11	12	17	22	33	43
23" SPECIAL	35°	5	6	7	11	12	17	22	34	46
	40°	4	6	6	10	11	15	19	29	38
	45°	4	5	6	9	9	13	17	26	34
	50°	3	4	5	8	9	12	16	23	31
	55°	3	4	5	7	8	11	14	21	28

NOTE: "Starters" required for motors larger than ½ hp. must be designed for a specific voltage and are not interchangeable between 110 and 220 V lines.

Glass surfaces may be converted into equivalent area of standard wall insulation by means of the following glass factors.

Multiply the square foot of glass area by the conversion factor corresponding to the unglazed portion of the cabinet, and add the resulting product to the *total* wall surface of the refrigerator. (Do not deduct glass area from total wall surface, as the following factors compensate for this.)

GLASS FACTORS

For All-Steel Cabinets Layers of Glass				For Wooden Cabinets Layers of Glass		
Single	Double	Triple	Corkboard	Single	Double	Triple
3.2	0.7	0.1	1"	6.5	2.0	1.0
5.2	1.5	0.6	1½"	8.3	2.8	1.4
7.2	2.3	1.1	2"	10.4	3.7	1.9
9.5	3.2	1.7	2½"	11.8	4.7	2.4
11.5	4.0	2.2	3"	14.0	5.1	2.9
13.2	4.8	2.7	3½"	16.0	5.9	3.3
15.8	5.9	3.4	4"	17.0	6.3	3.7

Example: Assume that the refrigerator described in the plotted example (see chart) has two glazed doors—double glass, 24" x 36". This is 2 x 24 x 36/144, or 12 square feet of double glass. 5.1 is the conversion factor for double glass in terms of 3" corkboard sheathed in wood case. 5.1 times 12 gives 61,—indicating that 12 square feet of glass in the 270 square foot refrigerator is equivalent to 270 plus 61, or a 331 square foot refrigerator (with 3" corkboard sheathed in wood walls) without glass surfaces. Thus the 270 square foot glazed box treated as a 331 square foot unglazed box will be found to require a No. 40 system.

STANDARD WELSBACH SYSTEMS

Model	Capacity B.t.u. Per hr.	B.t.u. Per 16 hrs.	Lbs. Ice 24 hrs.	Hp.	Compressor Stroke	Bore	R.P.M.
10	750	12,000	125	⅛	¾"	3"	300
20	1,000	16,000	165	¼	1"	3"	300
25	1,200	19,200	200	¼	1"	3"	360
28	1,750	28,000	292	⅓	1"	3"	525
30	2,000	32,000	333	⅓	1–5/16"	3¾"	300
35	2,666	42,666	445	½	1–5/16"	3¾"	400
40	3,500	56,000	583	¾	1–5/16"	3¾"	525
70	5,333	85,333	890	1	Two-1–5/16"	3¾"	400
80	7,000	112,000	1,166	1½	Two-1–5/16"	3¾"	525

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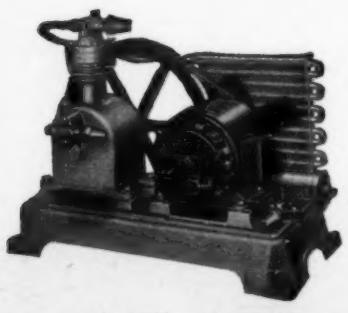

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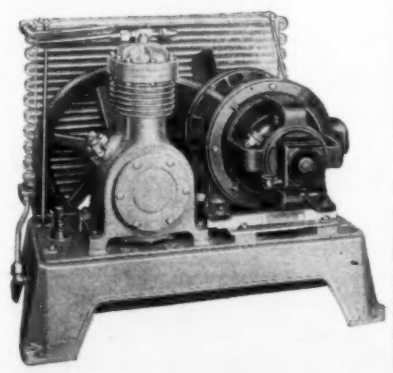


REFRIGERATION PATENTS ISSUED

Note—The following refrigeration patents were issued by the United States Patent Office during the period from October 29 to November 5, inclusive.

ISSUED OCTOBER 29

1,733,300—CREAM-COOLING DEVICE. Arthur N. Gullickson, Cushing, Wis. Filed June 15, 1927. Serial No. 199,083. 5 Claims. (Cl. 257—179.)

1,733,400—EVAPORATOR TANK AND METHOD. John O. Carrey, St. Louis, Mo., assignor to C. & C. Engineering Co., Inc., St. Louis, Mo., a Corporation of Missouri. Filed May 10, 1926. Serial No. 108,075. 9 Claims. (Cl. 62—95.)

1. An evaporator tank for refrigerating systems comprising a sealed container, a refrigerant releasing member arranged near the lower end of said container, a loose mass of heat transfer material disposed in said container and adapted to be traversed by said refrigerant whereby the heat is transferred from said mass to said refrigerant, a layer of filtering material arranged in said container above said mass of heat transfer material for permitting only gaseous refrigerant to enter the upper end of said container, and connections leading from the upper end of said container for conveying the gaseous refrigerant therefrom.

1,733,582—COOLING APPARATUS. George E. Cox, Niagara Falls, N. Y., assignor to American Cyanamid Company, New York, N. Y., a Corporation of Maine. Filed Apr. 25, 1925. Serial No. 25,764. 5 Claims. (Cl. 257—73.)

1,733,740—APPARATUS FOR MANUFACTURING ICE CREAM AND THE LIKE. Clarence W. Vogt, Louisville, Ky., assignor to Vogt Instant Freezers, Incorporated, Louisville, Ky., a Corporation of Delaware. Filed Jan. 18, 1927. Serial No. 161,844. 14 Claims. (Cl. 257—96.)

1,733,755—KNOB FOR FOOD-CABINET LIDS. John R. Replogle, Detroit, Mich., assignor, by mesne assignments, to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Aug. 26, 1926. Serial No. 131,591. 3 Claims. (Cl. 16—121.)

1. A knob comprising a sheet metal inner bell shaped frame, a sheet metal casing bent around said inner frame, said casing including a plurality of longitudinally disposed annular sections having their abutting edges pressed tightly together to form a rigid structure, and attachment means associated with said inner frame.

1,733,760—FLUID COOLER. Charles C. Spreen, Detroit, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a Corporation of Michigan. Filed Oct. 30, 1926. Serial No. 145,155. 1 Claim. (Cl. 62—141.)

In a fluid cooler refrigerated by mechanical apparatus, an outer casing, a sealed inner casing for containing fluid, a fluid inlet in open communication with the top portion of said inner casing, a valved outlet leading from said inner casing to the exterior of said outer casing, a refrigerant expansion coil in said inner casing arranged to cause the refrigerant to move downwardly substantially the entire length thereof, and a thermostat exterior of said inner casing thermally responsive to the fluid at the top of said inner casing for automatically controlling the apparatus to maintain the fluid in said inner casing at a predetermined temperature.

1,733,793—MECHANICAL REFRIGERATION. Arnold H. Goss, Detroit, Mich. Filed June 3, 1926. Serial No. 113,422. 1 Claim. (Cl. 62—117.)

In a refrigerated cabinet, a frame formed of walls arranged to define a single refrigerated chamber, one wall of said frame having an opening extending substantially the entire height and width of said chamber, a single door closing the opening in said wall, a shield having an aperture therethrough and arranged to divide said chamber into two compartments extending the entire depth and height thereof, said shield having top and bottom openings therethrough to permit circulation of air between said compartments, and a freezing unit in one of said compartments provided with freezing trays so disposed as to be accessible through the opening in said frame and the aperture in said shield.

1,733,794—MECHANICAL REFRIGERATION. Arnold H. Goss, Detroit, Mich. Filed Aug. 28, 1926. Serial No. 132,300. 3 Claims. (Cl. 62—116.)

1. In combination: a refrigerator cabinet provided with a refrigerating compartment and having a single relatively large opening affording access to said compartment, said compartment being divided into a refrigerated section accessible through said relatively large opening, and a normally sealed heat insulated humidor section separated from said refrigerated section except for a relative small opening affording access to said humidor section through said relatively large opening; humidor door means tightly closing said relatively small opening; and door means arranged to close said relatively large opening.

ISSUED NOVEMBER 5

1,734,127—REFRIGERATING COIL. James Telford Hamilton, Berkeley, Calif. Filed Mar. 2, 1927. Serial No. 171,983. 6 Claims. (Cl. 62—95.)

1. The combination with a storage compartment, of an expansion header disposed in the upper corner of said compartment, and expansion pipes extending from said header across the top of the compartment and in close proximity to the ceiling, and radiating fins secured to said pipes and extending substantially in the plane of the compartment ceiling.

1,734,278—REFRIGERANT. John Gudbrand Tandberg, Lund, Sweden, assignor, by mesne assignments, to Electrolux Servel, a Corporation of Delaware. Filed Oct. 1, 1925. Serial No. 59,965, and in Sweden July 7, 1925. 8 Claims. (Cl. 252—5.)

7. A group of substances for use in refrigeration comprising a methyl-amine as a cooling agent, an alcohol as a solvent therefor and a salt as a solute for lowering the vapor tension of the solvent.

8. A group of substances for use in refrigeration comprising a methyl-amine as a cooling agent, an alcohol as a solvent therefor and a chromate dissolved in the alcohol.

1,734,349—CONTROL MECHANISMS FOR REFRIGERATING SYSTEM. Albert C. Schickler, Cleveland, Ohio, assignor to Edmund E. Allyne, Cleveland, Ohio. Filed Sept. 15, 1927. Serial No. 219,690. 2 Claims. (Cl. 62—5.)

1. Refrigerating apparatus, comprising connected still-absorber and evaporator members, a gas burner for heating the still, a valve therefor, a pilot burner, a flexing bimetal device located in the zone of the pilot flame, whereby it is flexed in one direction by the heat of the flame and is flexed oppositely when permitted to cool, an operating connection between said device and valve whereby the valve is operated back and forth by the device and is opened by its movement when heated, operating means also connected to said valve to move it toward closed position, and normal control means for said operating means actuated by changing conditions in said members, whereby valve opening movement is produced by the heat of the pilot flame and is normally controlled by said members and said valve invariably closes when the pilot flame is extinguished.

1,734,366—REFRIGERATOR. Frederick J. Corneil, Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed Aug. 9, 1926. Serial No. 128,278. 3 Claims. (Cl. 62—46.)

1. In a mechanically operated refrigerator having a food storage compartment therein and a closure therefor, a shelf positioned within said compartment with some of its edges forming close joints with the walls of said compartment, a secondary closure adapted to cover the opening beneath said shelf.

1,734,404—REFRIGERATOR. James E. Sapp, Bainbridge, Ga., assignor to Rich Manufacturing Company, Bainbridge, Ga. Filed Aug. 8, 1928. Serial No. 298,345. 7 Claims. (Cl. 312—36.)

1. In a refrigerator of the character described, a rectangular box having a round bottom tub removably fitted in and extending from end to end thereof, a plurality of round bottom commodity compartments removably fitted in said tub, and a cover for said box composed of a plurality of sections, each providing a lid for a separate one of said compartments, one side wall of each compartment having an upward extension, and each section of the cover having an inner lining of insulating material adapted to co-operate with the wall extensions of the compartments to exclude entrance of air into one compartment when the cover section of an adjacent compartment is opened.

1,734,497—SEALING MEANS FOR REFRIGERATING MACHINES. Alexander S. Limpert, Bay Shore, N. Y. Filed Nov. 26, 1926. Serial No. 150,795. 4 Claims. (Cl. 286—11.)

1. A sealing means for compressor shafts of refrigerating machinery, comprising a main shaft concentrically mounted in an anti-friction bearing, which is adapted to take up the thrust of said shaft, said bearing having inner and outer raceways and rolling elements mounted therebetween, a housing through which said shaft projects and sealing means having a gas-tight fit with the outer end of the inner raceway of the bearing for preventing the escape of fluid through the joint between the shaft and the housing, said sealing means including a spring-pressed gasket, a floating metallic washer mounted on said shaft and interposed between the outer end of said inner raceway and said gasket, which ring is adapted to permit of a film of lubricant being maintained between the inner face thereof and the adjacent face of said inner raceway.

1,734,550—REFRIGERATION APPARATUS. Clarence Warner and Elmer L. Horlacher, Dayton, Ohio, assignors, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed Aug. 5, 1925. Serial No. 48,326. 20 Claims. (Cl. 62—5.)

1. Absorption refrigerating apparatus including generator-absorber means, means for heating the generator-absorber means, means for cooling the generator-absorber means, a movable member adapted when in one position to render the heating means operative and when in another position to render the cooling means operative, a mechanism for positively moving the movable member to one position, means responsive to one predetermined condition of the system for actuating said mechanism, a second mechanism for positively moving the movable member to a second position, means responsive to another predetermined condition in the system for actuating the second mechanism, and means for automatically disconnecting the second mechanism from the movable member after movement to its second position.

1,734,569—VALVE. Joseph H. Godfrey, Chicago, Ill., assignor to The Creamery Package Mfg. Company, Chicago, Ill., a Corporation of Illinois. Filed July 6, 1926. Serial No. 120,607. 1 Claim. (Cl. 137—21.)

A device of the class described, comprising a casing having a chamber with an upper inlet opening and a lower outlet opening, a reciprocatory valve controlling said inlet opening and having a guiding structure extending into said chamber, a rotary valve controlling said outlet opening, having a U-shaped lateral recess formed therein, an auxiliary passage leading outwardly of said casing independently of said inlet and said outlet openings and having a port in the seat of said rotary valve, a sterilizing fluid inlet passage also having a port in the seat of said rotary valve, a cross member positioned in said recess adapted to engage the guiding structure of said reciprocatory valve and effect the opening of said reciprocatory valve with the opening movement of said rotary valve, said recess being positioned so that said ports are closed by said rotary valve when said valves are in opened position and establishing communication through said recess between said chamber and said ports when said valves are in closed position.

1,734,604—FLOAT VALVE. Lawrence C. Smith, Detroit, Mich. Filed Dec. 12, 1927. Serial No. 239,587. 6 Claims. (Cl. 137—104.)

1. A float chamber for refrigerating apparatus having inlet and outlet passages therein for a refrigerating medium and a detachable valve assembly comprising a valve seat and valve threadedly engaging one of said passages for controlling the flow of refrigerant therethrough, said valve assembly being adapted to be removed from a point exteriorly of the chamber.

1,734,771—REFRIGERATOR CONSTRUCTION. Chauncey L. Mitchell, Winchester, Mass., assignor to Refrigeration Corporation of America, Boston, Mass., a Corporation of Massachusetts. Filed Apr. 4, 1928. Serial No. 267,266. 16 Claims. (Cl. 72—45.)

1. A rectangular heat insulated wall section unit comprising a thick core of cork board, a reticulated metal reinforce layer on each face of the core, metal reinforce layer on each face of the core, metal anchors at each face interlocked with the reinforce and extending part way only through and embedded in the core out of contact with the anchors extending from the opposite face and a cement layer on each face of the core with the reinforce and anchors embedded therein.

1,734,888—ICE-SAWING MACHINE. Emil C. Wells, North White Lake, N. Y. Filed Nov. 26, 1927. Serial No. 235,836. 4 Claims. (Cl. 262—20.)

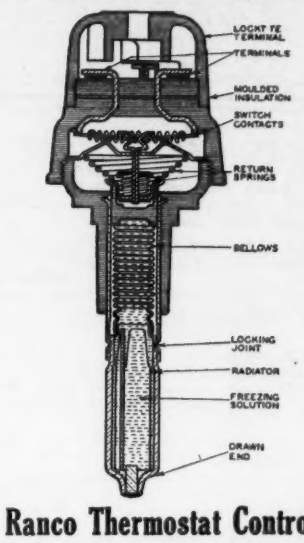
ELECTRO-KOLD SHIPMENTS FOR OCTOBER SHOW GAIN

Spokane, Wash.—October shipments by the Electro-Kold Corporation are 30 per cent in excess of the same month last year, according to H. L. Masterson, general manager. The trend of business has been particularly favorable in the Southern California field. The outlook for business for the coming winter and spring is promising.

WAYNE SALES MANAGER VISITS COAST DEALERS

Seattle, Wash.—F. E. Mills, general sales manager for Wayne Home Equipment Co., was the chief speaker at a sales conference of the Washington Home Equipment Co., Wayne distributors. Mr. Mills is now touring the Pacific Northwest and California.

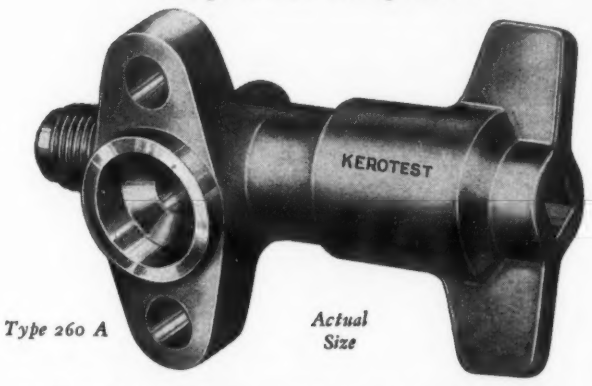
Patents Searches, reports, opinions by a Specialist in REFRIGERATION
H. R. VAN DEVENTER
Solicitor of Patents
Refrigeration Engineer
342 Madison Ave., N. Y.



Ranco Thermostat Controls
for Household Refrigerators, Ice Cream Cabinets, Water Coolers, etc., maintain an even temperature. Once installed, no further adjustments necessary. Now standard equipment with many manufacturers. *Write for Bulletin 603.*
THE AUTOMATIC RECLOSING CIRCUIT BREAKER COMPANY
COLUMBUS, OHIO, U. S. A.

The BEST and BIGGEST Line for the BIGGEST Commercial Field in America
A complete variety of super-improved equipment for the great Ice Cream and Soft Drink trade, ICE-CREAM CABINETS, SODA FOUNTAINS, RESTAURANT COOLERS, BOTTLE COOLERS, Etc., for use with ALL types of Refrigerating units. *Write for catalogue and prices—state type of machine you make or handle.*
AURORA METAL CABINET WORKS, INC., Aurora, Ill.

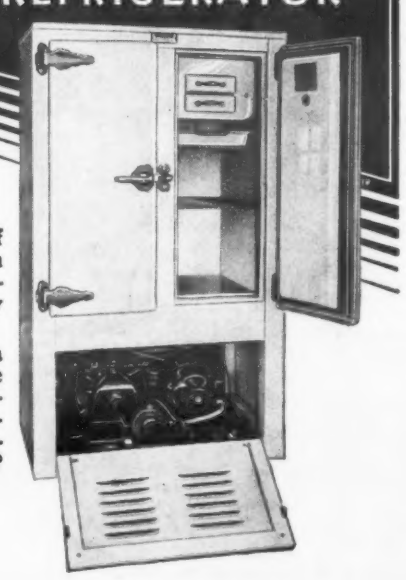
A REAL EVAPORATOR VALVE
Has No Soldered Joints!
Compact and Inexpensive



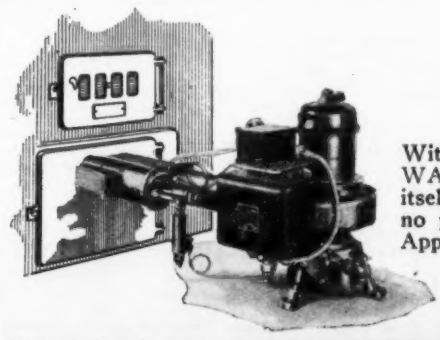
Type 260 A *Actual Size*

Can be supplied with flat flange and Hex Seal Cap. Valve is only 2¾" long over all and will grace any unit. Seal Cap is forged brass, with square forged to shape to provide full bearing on stem square. Designed and made by valve specialists.
KEROTEST MFG. CO. Pittsburgh, Pa.

Wayne
ELECTRIC REFRIGERATOR

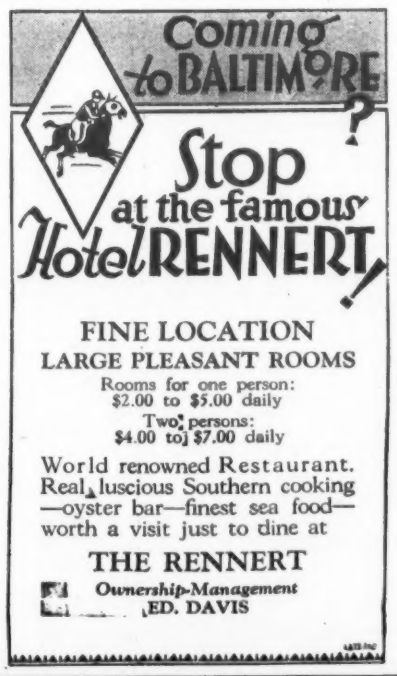


Double Your
Sales--and Profits!
To the new, complete, colorful line of Wayne Electric Refrigerators has been added the separate refrigerating units—(Two sizes)—that can be installed in any refrigerator!
This means that every home is now a REAL PROSPECT! That wherever the housewife prefers to retain her own refrigerator—the Wayne electric refrigerating unit can be easily and quickly installed! Want to know more about it? Just drop us a line!



Oil Burners, Too!
With only one moving shaft, the New WAYNE OIL BURNER is in a class by itself! No carburetor, cams, floats, and no part of burner in or under fire box. Approved by National Fire Underwriters! Quick and Easy to install! Big profits for responsible dealers!

WAYNE HOME EQUIPMENT CO.
Fort Wayne, Indiana


Coming to BALTIMORE
Stop at the famous Hotel RENNERT
FINE LOCATION
LARGE PLEASANT ROOMS
Rooms for one person: $2.00 to $5.00 daily
Two persons: $4.00 to $7.00 daily
World renowned Restaurant. Real luscious Southern cooking—oyster bar—finest sea food—worth a visit just to dine at
THE RENNERT
Ownership-Management
ED. DAVIS

Sulphur Dioxide!
For Direct Charging!
Every Container Analyzed
"Pure" Bone Dry . . . Cylinders 2 to 150 lbs
ANSUL Chemical Co. MARINETTE, WIS
Also . . . Ton Drums-Tank Cars

Special Directory of Manufacturers of Parts,

A

Acme White Lead & Color Works,
8250 St. Aubin St., Detroit, Mich.
Trade name ..... **Acme**
Lacquers and white lead.

Aetna Rubber Co., Ashtabula, Ohio,
Trade name ..... **Rubberware**
Rubber belts and stoppers, ice cream cabinet top hole sections and lid collars.

Ajax Bolt & Screw Co.,
6623 Gratiot Ave., Detroit, Mich.
Screws, bolts, nuts, washers, taper pins, woodruff keys, studs and special screw machine parts.

Allegheny Steel Co., Breckenridge, Pa.
Sheet steel

Allen-Bradley Co.,
494 Reed St., Milwaukee, Wis.
Safety and starting switches.

Allied Products Corp.,
Victor Peninsular Division, 4646 Lawton, Detroit, Mich.
Trade name..... **Victor-Hi-Tensil**
Standard, alloy steel, Monel metal, brass and stainless iron cap screws.

Aluminum Co. of America,
Oliver Bldg., Pittsburgh, Pa.
Trade name ..... **Alcoa**
Aluminum base metal.

American Brass Co.,
414 Meadow St., Waterbury, Conn.
Trade name ..... **Anaconda**
Brass, bronze and Ambrac in sheets, rods and strips for condensers, hardware and trimmings. Brass, bronze and Ambrac forgings and die pressed parts, including valves, fittings, hardware, etc. Everdur metal rods, forgings and die pressed parts for valves and other parts which come in contact with acids and refrigerants. Everdur for screws and bolts. Copper and copper alloy tubes. Everdur is a copper-silicon-manganese alloy containing no zinc.

American Cyanamid Co.,
535 Fifth Ave., New York, N. Y.
Trade name ..... **Aero Brand**
Anhydrous ammonia.

American Electric Switch Corp., Minerva, Ohio.
Service switches.

American Hammered Piston Ring Co.,
Bush & Hamburg Sts., Baltimore, Md.
Piston rings.

American Insulated Wire & Cable Co.,
954 W. 21st St., Chicago, Ill.
Insulated wire and cable.

American Metal Hose Co.,
Waterbury, Conn.
Flexible hose and tubing.

American Nut Co.,
676 W. Grand Blvd., Detroit, Mich.
Steel, brass and bronze nuts.

American Radiator Co.,
Industrial Division, 816 S. Michigan Ave., Chicago, Ill.
Trade name..... **American**
Expansion and float valves and cooling sections.
Acessories Division, 40 W. 40th St., New York, N. Y.
Trade name..... **Mercoid**
Refrigeration temperature or pressure controls with or without high pressure cutouts and water valves.

American Rolling Mill Co.,
703 Curtis St., Middletown, Ohio.
Trade name ..... **Armco**
Ingot iron enameling sheets.

American Solder & Flux Co.,
2910 N. 16th St., Philadelphia, Pa.
Acid core solder.

Ansul Chemical Co., Marinette, Wis.
Trade name ..... **Ansul**
Sulphur dioxide.

Apex Regulator Co.,
508 South Third Ave., Marshalltown, Iowa.
Trade name..... **Apex**
Expansion valves, water pressure control regulators and strainers.

Appleton Electric Co.,
1701 Wellington Ave., Chicago, Ill.
Trade name ..... **Unilets**
Conduit fittings.

Arcade Mfg. Co.,
1212 E. Shawnee St., Freeport, Ill.
Trade name ..... **Arcade**
Automatic cold storage locks. Cold storage strap iron hinges. Automatic locks for wall and walk-in coolers. Cast brass and bronze hinges.

Armour & Co., Chicago, Ill.
Anhydrous ammonia.

Armstrong Cork & Insulation Co.,
Lancaster, Pa.
Trade name ..... **Armstrong**
Corkboard insulation. Cork covering for low temperature lines.

Auburn Button Works, Inc., Auburn, N. Y.
Custom moulders of Bakelite and celluloid, celluloid sheets and rods.

Automatic Products Co.,
1145 W. Grand Blvd., Detroit, Mich.
Screw products.

Automatic Reclosing Circuit Breaker Co.,
Sixth & Wesley Sts., Columbus, Ohio.
Thermostats, magnetic switches, automatic reclosing circuit breakers, starters, contactors and relays.

Automatic Refrigerating Co., Inc.,
618 Capitol Ave., Hartford, Conn.
Automatic expansion and thermostatic expansion valves, solenoid liquid ammonia valve, high pressure cut-off and back pressure regulator.

B

Baldor Electric Co.,
4351 Duncan Ave., St. Louis, Mo.
Trade name ..... **Baldor**
Single phase, repulsion-induction and single phase, high torque, brushless condenser type motors. Direct current and polyphase motors.

Balsa Wood Co.,
158 Pioneer St., Brooklyn, N. Y.
Trade name..... **Lata Balsa**
Insulation lumber.

Barostat Co., 19 Pearl St., Boston, Mass.
Trade name ..... **Barostat**
Snap action valves and snap action switches.

Bassick Co., 38 Austin St., Bridgeport, Conn.
Casters.

Beaver Manufacturing Co.,
625 North Third St., Newark, N. J.
Trade name..... **Beaver**
Armored motor base and connector, sockets, switches and connectors.

Belden Mfg. Co.,
2300 South Western Ave., Chicago, Ill.
Trade name ..... **Belden**
Soft rubber plugs and connectors.

Berry Bros., 211 Lieb St., Detroit, Mich.
Trade name ..... **Berryloid**
Lacquers, enamels and rustproofing materials.

Bishop & Babcock Sales Co.,
4901 Hamilton Ave., N. E., Cleveland, Ohio.
Trade name ..... **Thermolectric, Red Cross**
Switches for pressure or temperature control, seamless metal bellows. Also make soda fountains.

Blazek Cold Storage Door Co.,
2232 West Lake St., Chicago, Ill.
Trade name..... **Blazek**
Cooler, freezer, bunker, service and metal clad doors. Refrigerator and mortuary fronts. Cold storage and service windows. Ice cream and milk can passing doors.

Bohn Aluminum & Brass Corp.,
2512 East Grand Blvd., Detroit, Mich.
Line and shut-off valves, brass forgings, die castings, flared tube nuts, forged and die cast hardware.

Bosley Co., D. W.,
1901 Carroll Ave., Chicago, Ill.
Trade name ..... **Bosley**
Door gaskets.

Bower Roller Bearing,
3040 Hart Ave., Detroit, Mich.
Roller bearings.

Boydell Bros.,
432 E. Lafayette St., Detroit, Mich.
Paints, varnishes and lacquers.

Bradley-Hurtz Co.,
2713 S. Dearborn St., Chicago, Ill.
Lacquers and enamels.

Bridgeport Brass Co.,
774 East Main St., Bridgeport, Conn.
Cold forged compression nuts, boilers, condensers, float balls, special brass and copper shells and special blanked and formed parts.

Buhl Stamping Co.,
2730 Scotten Ave., Detroit, Mich.
Metal stampings.

Bush Mfg. Co.,
100 Wellington St., Hartford, Conn.
Seamless copper tubing condensers with individual fins.

C

Cabot, Inc., Samuel, 141 Milk St., Boston, Mass.
Trade name ..... **Cabot's Quilt**
Insulating quilt. (Basic material, eel grass.)

Calco Chemical Co., Bound Brook, N. J.
Trade name..... **Calco**
Sulphur dioxide.

Carbo-Freezer Co., Inc.,
14 W. 42nd St., New York, N. Y.
Trade name ..... **Carbofrost**
Carbon dioxide ice.

Cash Valve Mfg. Co.,
616 N. Water St., Decatur, Ill.
Water valves.

Celotex Co.,
919 N. Michigan Ave., Chicago, Ill.
Trade name ..... **Celotex**
Insulation board. (Basic material, cane fibre.)

Central Alloy Steel Corp., Massillon, Ohio.
Trade name ..... **Toncan**
Iron sheets.

Century Electric Co.,
1806 Pine St., St. Louis, Mo.
Trade name ..... **Century**
Single phase repulsion start induction motors, split phase RS induction motors, automatic start induction polyphase motors, normal starting current normal torque SC induction polyphase motors, low starting current normal torque SC induction polyphase motors and direct current motors.

Chase Brass & Copper Co.,
80 Lafayette St., New York, N. Y.
Trade name ..... **Chase**
Seamless copper tubing.

Chicago-Wilcox Mfg. Co.,
E. 77th St. & Anthony Ave., Chicago, Ill.
Gaskets and stampings of metal, asbestos, cork, rubber and paper.

Cleveland Cap Screw Co.,
2917 E. 79th St., Cleveland, Ohio.
Head cap screws, special and hexagon, steel or alloy.

Cleveland Evaporator Co.,
6400 Breakwater Ave., Cleveland, Ohio.
Evaporator sections.

Clifford Manufacturing Co.,
564 E. First St., Boston, Mass.
Metal bellows for temperature controls, compressor shaft seals and stuffing boxes. Straight thru and T types, packless valves.

Collis Co., Clinton, Iowa.
Wire shelving.

Colt's Patent Fire Arms Mfg. Co.,
117 Van Dyke Ave., Hartford, Conn.
Seal rings and safety switches.

Commonwealth Brass Corp.,
Commonwealth Ave. & G. T. R. R.,
Detroit, Mich.
Forged brass, flared tube fittings and nuts, automatic screw machine products.

Connecticut Electric Mfg. Co., Bridgeport, Conn.
Bakelite and porcelain attachment plugs, cutouts and switches.

Conn Perry Mfg. Co.,
4341 Horatio Ave., Detroit, Mich.
Screw machine products.

Continental-Diamond Fibre Co.,
Newark, Dela., and Bridgeport, Pa.
Trade name....**Dilecto, Diamond Fibre, Celeron**
Vulcanized fibre sheets, rods and tubes, laminated phenolic sheets, rods and tubes, silent gears and gear material, plastic moulding powder.

Continental Rubber Works, Erie, Pa.
Packings, sealing gum, V and flat type belts, pads.

Cooke Seal Ring Co.
30 N. Green St., Chicago, Ill.
Trade name ..... **Cooke Seal**
Crankshaft, oil, water and brine pump seals. Replacement seal units. Seals for all liquids and gases-pressure or vacuum on rotating shafts.

Cope-Swift Co., Inc.,
247 McDougall Ave., Detroit, Mich.
Cooling fans and cast iron pulleys for V-belts.

Cordley & Hayes
1 Leonard St., New York, N. Y.
Trade name.....**20th Century, Cordley, C & H**
Gravity type faucets for inverted bottle water coolers. Pressure type faucets for water coolers. Also make bottle and pressure type water coolers.

Cork Import Corp.,
345 West 40th St., New York, N. Y.
Trade name ..... **Novoid**
Corkboard insulation. Cork pipe covering and fittings for cold lines.

Cork Insulating Co., Inc.,
154 Nassau St., New York, N. Y.
Cork insulation.

Crouse-Hinds Co.,
400 Comstock Ave., Syracuse, N. Y.
Switches, condulets.

Crowe Name Plate & Mfg. Co.,
4835 Woodward Ave., Detroit, Mich.
Name plates.

Cutler-Hammer Mfg. Co.,
12th & St. Paul Ave., Milwaukee, Wis.
Electric controls.

D

Dairy Refrigeration Co.,
311 64th Ave., Milwaukee, Wis.
Trade name ..... **Glenn**
Cooling and storage tanks, dry boxes, aerators, brine tanks and pumps. Also make electric refrigeration systems.

Dallas Brass & Copper Co.,
Division of Republic Brass Corp.,
620 Orleans St., Chicago, Ill.
Copper and brass sheets and tubing.

Dayton Rubber Mfg. Co., Dayton, Ohio.
Trade name ..... **Dayton**
Rubber belts and stoppers, crutch tips for condensing unit bases.

Delco Products Corp., Dayton, Ohio.
Factional horsepower motors.

Delco-Remy Corp., Anderson, Ind.
Motors.

Dent Hardware Co., Fullerton, Pa.
Trade name ..... **Dent**
Hardware.

Detroit Brass & Malleable Works,
1177 Holden Ave., Detroit, Mich.
Trade name ..... **Fourdee**
Brass and malleable iron castings and rod products.

Detroit Metal Specialty Corp.,
1651 Beard Ave., Detroit, Mich.
Liquid receivers, boiler shells, stamped fans and fly wheels.

Detroit Nut Co., Inc.,
2456 Hubbard Ave., Detroit, Mich.
Steel, brass and bronze nuts.

Detroit Screw Works,
1477 E. Atwater St., Detroit, Mich.
Brass and steel cap screws, nuts and studs. Brass pipe connections. Brass and steel special screw machine parts.

Detroit Stamping Co.,
3445 W. Fort St., Detroit, Mich.
Trade name ..... **De-Sta-Co**
Diaphragms for expansion valves and spacers.

Domestic Electric Co.,
7223 St. Clair Ave., Cleveland, Ohio.
Trade name..... **Domestic**
Fractional horsepower motors.

Domestic Utilities,
Garrison Blvd. at Western Md. R. R., Baltimore, Md.
Trade name..... **Coldbloc, Reco**
Soap,cleaner polish. Also milk cooling cabinets.

Dow Chemical Co., Midland, Mich.
Calcium chloride.

Dry-Ice Corp. of America,
52 Vanderbilt Ave., New York, N. Y.
Trade name ..... **Dry-Ice**
Solid carbon dioxide.

Dry-Zero Corp., 130 N. Wells St., Chicago, Ill.
Trade name..... **Dry-Zero**
Pliable slab and blanket insulation.

Du Pont De Nemours & Co., E. I.,
Chemical Products Division, Parlin, N. J.
Trade name ..... **Duco**
Chemicals, paint, varnish and finishing materials.
Rubber Products Division, Fairfield, Conn.
Trade name ..... **Du Pont**
Gasket material.

Durable Products Co.,
5005 Euclid Ave., Cleveland, Ohio.
Trade name ..... **Paracote**
Liquid gum coating.

Dwelley, Inc., G. M.,
Curtis Bldg., Detroit, Mich.
Trade name ..... **Flexotray**
Rubber ice cube trays.

E

Ebinger Sanitary Mfg. Co., D. A.,
401 W. Town St., Columbus, Ohio.
Trade name ..... **Ebco**
Self closing automatic pressure regulating valves and pressure regulating valves. Also make water and beverage coolers.

Egyptian Lacquer Mfg. Co., Inc.,
90 West St., New York, N. Y.
Trade name ..... **Egyptian**
Lacquers, primers, fillers, glazes, undercoatings, enamels and thinners.

Emerson-Brantingham Corp., Rockford, Ill.
Porcelain enamel ware.

Emerson Electric Mfg. Co.,
2018 Washington Ave., St. Louis, Mo.
Trade name ..... **Emerson Motors.**

F

Fafnir Bearing Co., New Britain, Conn.
Ball bearings.

Faultless Caster Co.,
Garvin St., Evansville, Ind.
Casters.

Fedders Mfg. Co.,
57 Tonawanda St., Buffalo, N. Y.
Condensers, float valves and evaporators. Brine tanks, freezing units, expansion valves, liquid receivers, filters, strainers, trays and grids.

Federal Asbestos & Cork Insulation Co.,
44th & State Sts., Milwaukee, Wis.
Cork insulation.

Ferro Enamel Supply Co., Cleveland, Ohio.
Porcelain enamels and porcelain enameling equipment.

Filtrine Mfg. Co.,
49 Lexington Ave., New York, N. Y.
Trade name ..... **Filtrine**
Filters for water coolers. Also make water coolers.

Flint Foundry Co., Division of General Foundry & Machine Co., Flint, Mich.
Gray and malleable iron castings.

Flintlock Corp.,
4461 W. Jefferson Ave., Detroit, Mich.
Trade name ..... **Flintlock**
Condensers.

Foster Wheeler Corp.,
165 Broadway, New York, N. Y.
Copper and brass tubing

Foxboro Co., Inc., Foxboro, Mass.
Recording equipment.

France Packing Co., Tacony, Philadelphia, Pa.
Metallic packing.

French Mfg. Co.,
128 Robbins, Waterbury, Conn.
Seamless copper tubing.

Fretz Copper & Brass Co.,
523 Arch St., Philadelphia, Pa.
Copper tubing.

Fry Glass Co., H. C., Rochester, Pa.
Glass refrigerator dishes.

Fulton Sylphon Co., Knoxville, Tenn.
Trade name ..... **Sylphon**
Metal bellows and temperature controls.

G

Gale Mfg. Co., Albion, Mich.
Castings.

Gardner Machine Co.,
Thompson St., Beloit, Wis.
Grinders of crank shafts and eccentrics.

Gates Rubber Co.,
999 S. Broadway, Denver, Colo.
Belts, hose and moulded rubber products.

General Bearing Co.,
81 W. 60th St., New York, N. Y.
Ball bearings.

General Electric Co., Schenectady, N. Y.
Fractional horsepower motors and wiring devices.

General Etching & Mfg. Co.,
3070 W. Grand Ave., Chicago, Ill.
Name plates, dials and stampings.

Geuder, Paeschke & Frey Co.,
St. Paul Ave. & 15th St., Milwaukee, Wis.
Trade name..... **Cream City Ware**
Drip, defrosting and freezing pans. Stampings and pressed parts from 14 to 30 gauge copper, steel, zinc, aluminum, brass, Monel and stainless steel, either plain, hot lead-coated, galvanizzed, tinned, japanned or vitreous enameled. Round refrigerator dishes.

Gilmer Co., L. H.,
Kenstone & Cottman Sts., Philadelphia, Pa.
Rubber V and flat type belts.

Globe Rubber & Tire Co., Inc.,
Prospect & Globe Sts., Trenton, N. J.
Trade name..... **Red Strand**
V-belts and rubber bushings.

Goodnow & Blake Mfg. Co.,
3840 Beaver St., Detroit, Mich.
Thermostats, suction controls, high pressure cut-outs, shaft seals and floats.

Goodrich Rubber Co., B. F.,
South Main St., Akron, Ohio.
V-belts, sponge rubber, rubber tubing, lathe cut washers and moulded rubber parts.

Grand Rapids Brass Co.,
66 Scribner Ave., N. W., Grand Rapids, Mich.
Cabinet hardware.

Gurney Ball Bearing Division, Marlin-Rockwell Corp., Jamestown, N. Y.
Ball bearings

H

Hale & Kilburn Co.,
1900 Lehigh Ave., Philadelphia, Pa.
Stampings. Also make ice cream cabinets and water coolers.

Handy & Harmon
57 William St., New York, N. Y.
Silver Solder.

Harry Bros. Mfg. Co.,
1302 E. Woodbridge St., Detroit, Mich.
Metal stampings.

Harshaw Chemical Co.,
Hanna Bldg., Cleveland, Ohio.
Chemicals used in preparing finishes.

Haven Mfg. Co.,
486 Milwaukee St., Milwaukee, Wis.
Brine tank and finned tube evaporating units for commercial and domestic application.

Henry Valve Co.,
3260 West Grand Ave., Chicago, Ill.
Forged brass valves, packless valves, strainers, relief valves, check valves, elbows, tees, crosses, flanges, unions, reducers, plugs, couplings and flared tube nuts.

Hoff & Forney
7023 E. Kirby, Detroit, Mich.
Shut-off valve stems, centerless grinding and screw machine parts.

Houghton & Co., E. A.
240 W. Somerset St., Philadelphia, Pa.
Compressor oils.

I

Icelect Corp., Omaha, Nebr.
Trade name..... **Icelect**
Evaporators. Also make electric refrigeration systems.

Iceless Refrigeration Accessories,
2401 Chestnut St., Philadelphia, Pa.
Belts, brass fittings, copper tubing, rubber accessories, gaskets, compressor parts, motors, brushes, test and recording thermometers and gauges.

Imitation Food Products Co.,
107 Lawrence St., Brooklyn, N. Y.
Imitation food products for refrigerator display.

Imperial Brass Co.,
1200 W. Harrison St., Chicago, Ill.
Forged brass valves and fittings. Also make flaring tools, service tools and welding equipment.

Insulation Cork Co.,
200 Broadway, New York, N. Y.
Corkboard insulation.

Insulite Co., 737 Conway Bldg., Chicago, Ill.
Trade name..... **Insulite**
All wood fiber board insulation.

International Nickel Co.,
67 Wall St., New York, N. Y.
Trade name..... **Monel Metal**
Monel metal and pure nickel. Monel Metal for angle and corner trim, bases, facings, linings, screws, nails, and parts, such as diaphragms and valve trim.

International Screw Co.,
2751 W. Kirby Ave., Detroit, Mich.
Steel and brass machine screws and nuts.

Ireland & Mathews Mfg.,
Beard & Chatfield Sts., Detroit, Mich.
Gaskets, cap screws and bolts.

J

Jarrow Products Corp.,
143 W. Austin St., Chicago, Ill.
Rubber door gaskets. Sponge rubber specialties.

Johns Manville, Inc.,
295 Madison Ave., New York, N. Y.
Asbestos products.

K

Keeler Brass Co.,
955 Godfrey Ave., Grand Rapids, Mich.
Cabinet hardware.

Kerotest Manufacturing Co.,
2525 Liberty Ave., Pittsburgh, Pa.
Trade name..... **Kerotest**
Forged brass fittings, forged brass valves with single or double shutoff, three-way valves, packless, pressure relief and cylinder valves and fusible safety plugs.

Kulair Corp.,
Kensington Ave. & M. St., Philadelphia, Pa.
Trade name..... **Kulair**
Freezing and condensing units.

Kurz Kasch Co., S. Broadway, Dayton, Ohio.
Bakelite moulded parts and composition ice trays.

L

Larkin-Warren Refrigerating Corp.,
519 Fair St., S. E., Atlanta, Ga.
Trade name..... **Larkin**
Vertical surface coils, flooded type. Also for dry expansion.

Lees Co., John,
241 Georgia St., Indianapolis, Ind.
Cabinet trimming and corner pieces.

Leland Electric Co.,
218 N. St. Clair St., Dayton, Ohio.
Fractional horsepower motors.

Lewis Asphalt Engineering Corp.,
30 Church St., New York, N. Y.
Trade name..... **Karnak, Krodeproof,** Korkseal
Special purpose asphalts and asphalt emulsion for insulation, waterproofing, dampproofing, frost proofing and pipe line protection.

Liberty Welding & Mfg. Co.,
4300 12th St., Detroit, Mich.
Trade name..... **Liberty**
Welded frames, liquid receivers.

Lima Sheet Metal Products Co.,
Charles St. & Pennsylvania R. R., Lima, O.
Ice cube freezing trays, machine bases, stampings, including porcelain enamel ware.

Lincoln Brass Co.,
2067 12th St., Detroit, Mich.
Brass castings.

Lincoln Electric Co., Cleveland, Ohio.
Motors.

Lindell Drop Forge Co.,
S. Logan St., Lansing, Mich.
Crankshafts and connecting rods.

Linderme Tube Co.,
1291 E. 53rd St., Cleveland, Ohio.
Copper tubing.

Little Bros. Foundry Co.,
24th & Connor St., Port Huron, Mich.
Gray iron and semi steel castings.

Luse Stevenson Co.,
307 N. Michigan Ave., Chicago, Ill.
Trade name..... **Reliable** Corkboard
Corkboard insulation.

M

Maas & Waldstein Co.,
438 Riverside Ave., Newark, N. J.
Lacquer primers, oil primers, lacquer enamels and thinners.

MacAndrews & Forbes Co.,
200 Fifth Ave., New York, N. Y.
Trade name..... **Mafiex**
Insulating board. (Basic material, licorice root fibre.)

Marathon Electric Mfg. Co.,
32 Island St., Wausau, Wis.
Trade name..... **O. K.**
Repulsion-induction motors, split phase and direct current motors.

Accessories and Materials for Refrigeration

Marsh & Co., James P.
2073 Southport Ave., Chicago, Ill.
Trade name.....
.....Marsh, General Instrument, Merkustat
Gages and mercury switches.

Master Electric Co., Dayton, Ohio.
Trade name.....Master
Motors, 1-3 to 10 hp.

Mathieson Alkali Works,
250 Park Ave., New York, N. Y.
Trade name.....Mathieson
Anhydrous ammonia.

May Screw Products,
2157 Howard Ave., Detroit, Mich.
Small machined parts.

McCord Radiator & Mfg. Co.,
2587 E. Grand Blvd., Detroit, Mich.
Spiral fin condensers.

McKean Co.,
5925-27 Baum Blvd., Pittsburgh, Pa.
Trade name.....McKean
Low side units.

McLaren Screw Products Co.,
522 15th St., Detroit, Mich.
Fittings in bronze, steel, brass and Monel Metal.

McNaughton & McKay,
313 W. Jefferson Ave., Detroit, Mich.
Anchors, motor bases and adapters.

Mercoid Corp.,
564 W. Adams St., Chicago, Ill.
Trade name.....Mercoid
Thermostats, high pressure safety cut-out, panel control and ammonia gauges.

Meriden Hoster Merriam Co., Meriden, Conn.
Casters.

Metal Glass Products Co.,
1 Reed St., Belding, Mich.
Trade name.....Metal Glass
Cabinet liners and porcelain products.

Miller Rubber Co. of New York,
S. High St., Akron, Ohio.
Gaskets, panel seal, sponge rubber gaskets, hard rubber insulation strips, belts and motor mounting.

Modern Machine Works, Inc.,
196 Milwaukee St., Milwaukee, Wis.
Crankshafts.

Mortell Co., J. W., Straus Bldg., Chicago, Ill.
Trade name.....Mortex
Insulation.

Motors Metal Mfg. Co.,
5936 Milford St., Detroit, Mich.
Metal stampings and welded parts. Angle iron bases, guards, exterior steel panels for domestic cabinets. Also make ice cream cabinets and parts.

Mueller Co., Decatur, Ill.
Brass fittings.

Mueller Brass Co., Port Huron, Mich.
Copper tubing, shut-off valves and fittings.

Mullins Mfg. Co., Salem, Ohio.
Defrosting pans.

Mundet & Son, L.,
1161 8th St., New York, N. Y.
Cork insulation.

N

National Ammonia Co., Inc.,
3600 N. Broadway, St. Louis, Mo.
Anhydrous ammonia.

National Brass & Copper Co.,
South side, Lisbon, Ohio.
Copper in sheets, rolls, plates and strips.
Trade name.....Flawless

National Copper & Smelting Co.,
12120 Euclid Ave., Cleveland, Ohio.
Copper tubing.

National Electric Products Corp.,
Industrial Dept., 1110 Fulton Bldg., Pittsburgh, Pa.
Trade names..Indestructo, Flexsteel, Sherarduct
Portable cord, armored wiring harnesses, flexible conduit, fittings for cable and conduit.

National Lead Co.,
111 Broadway, New York, N. Y.
White lead, babbitt and solder and lead tubing.

National Lock Co., Rockford, Ill.
Cap, machine and wood screws, and cabinet hardware.

National Pipe Bending Co.,
110 River St., New Haven, Conn.
Pipes, bends and coils.

National Screw & Mfg. Co.,
2440 E. 75th St., Cleveland, Ohio.
Cap screws and small machined parts.

National Vulcanized Fibre Co.,
Maryland Ave. & Beech St., Wilmington, Del.
Trade name.....Phenolite
Phenolite for electrical insulation, door tracks and slides on display cases and for trimming display cases.

New Departure Mfg. Co., Bristol, Conn.
Trade name.....New Departure
Ball bearings.

North American Provision Co.,
Morris & Co., Chicago, Ill.
Anhydrous ammonia.

Norton Co., Barbers Crossing, Worcester, Mass.
Grinders of crankshafts and eccentrics.

O

Oberdorfer Brass Co., M. L., Syracuse, N. Y.
Trade name.....Oberdorfer
Motor driven centrifugal pump.

Ohio Rubber Co.,
735 St. Clair St., Cleveland, Ohio.
Rubber stoppers and belts and crutch tips for condensing unit bases.

Ohio Electric & Control Co.,
5900 Maurice Ave., Cleveland, Ohio.
Motors.

Ohio Pipe Bending & Machine Co.,
3900-10 Trent Ave., Cleveland, Ohio.
Pipe coils and bends of steel, brass and copper pipe. Welded ammonia receivers and pipe headers.

Olsen Mfg. Co.,
54 Commercial St., Worcester, Mass.
Machine screws.

P

Pacific Lumber Co. of Illinois,
332 S. Michigan Ave., Chicago, Ill.
Redwood bark for insulation.

Page Steel & Wire Co.,
Union Trust Bldg., Pittsburgh, Pa.
Woven wire frames or guards.

Peerless Wire Goods Co., Lafayette, Ind.
Wire mesh shelving.

Penn Electric Switch Co.,
306 12th St., Des Moines, Iowa.
Trade name.....Penn
Temperature and pressure switches, water regulators for ammonia systems, combination water regulators and high pressure safety switches.

Pennrich & Co., Inc.,
29 Broadway, New York, N. Y.
Trade name.....Torfoleum
Insulation.

Peterson Spring Co.,
1660 Beard St., Detroit, Mich.
Coiled wire and flat steel springs.

Pheoll Mfg. Co.,
5700 Roosevelt Road, Chicago, Ill.
Screws, bolts, rivets and nuts.

Phenolic Products Corp., Rockford, Ill.
Molded Bakelite.

Pioneer Asphalt Co.,
365 E. Illinois, Ave., Chicago, Ill.
Hydroline asphalt.

Pittsburgh Plate Glass Co.,
Columbia Chemical Div., Barberton, Ohio.
Calcium chloride.

Porcelain Enamel & Mfg. Co.,
Eastern Ave. & 23rd. St., Baltimore, Md.
Trade name.....Pemco
Porcelain enamels.

Powell Co., William
1224 Draper St., Cincinnati, Ohio.
Air valves.

Progressive Mfg. Co.,
52 Norwood St., Torrington, Conn.
Screws, nuts and rivets.

Pure Cork Products Co., Inc.,
22 N. 4th St., Philadelphia, Pa.
Sheet corkboard.

Q

Quaker City Rubber Co.,
Comly & Minor Sts., Philadelphia, Pa.
V-belts.

Quality Mfg. Co., Watertown, Mass.
Pistons, pins, fans and pulleys.

R

Refrigerating Equipment Co.,
Fourth St. & Greenhill Ave., Wilmington, Del.
Trade name.....Glacifer-Knox
Lids for ice cream cabinets.

Reynolds Spring Co., Jackson, Mich.
Bakelite and composition parts.

Rhodes & Co., J. H.
157 W. Austin Ave., Chicago, Ill.
Trade name.....Colossus
Felt.

Rider, P. L., 317 Main St., Worcester, Mass.
Trade name.....Pneu-Dor Seal
Gaskets.

Robbins & Meyers, Inc., Springfield, Ohio.
Trade name.....R & M
Motors, generators and fans.

Roberts Brass Mfg. Co.,
5435 Fort St., Detroit, Mich.
Trade name.....Roberts
Brass fittings, valves and cocks.

Roberts Tube Works,
2500 Military Ave., Detroiti, Mich.
Seamless copper tubing.

Rodale Mfg. Co.,
200 Hudson St., New York, N. Y.
Trade name.....Rodale
Rubber attachment plugs with handles. Bakelite products.

Roessler & Hasslacher Chemical Co.,
10 East 40th St., New York, N. Y.
Trade name.....R & H
Methyl chloride.

Roller-Smith Co.,
233 Broadway, New York, N. Y.
Electrical control devices.

Rome Copper & Brass Co., Rome, N. Y.
Seamless copper tubing.

Romeson Mfg. Corp.,
First National Bank Bldg., Pittsburgh, Pa.
Trade name.....Romeo
Pumps and rotary compressors.

Rome-Hollow Wire & Tube Co., Rome, N. Y.
Seamless copper tubing.

Rome-Turney Radiator Co., Rome, N. Y.
Trade name.....Rome
Seamless copper tubing condensers.

Rome Wire Co., Rome, N. Y.
Insulated wire.

S

Safety Regulator Co.,
2840½ Guirado St., Los Angeles, Calif.
Protectostats and temperature control equipment.

Sargent & Co., New Haven, Conn.
Casters.

Savory, Inc.,
90 Alabama St., Buffalo, N. Y.
Porcelain enamel sheets. Also make domestic refrigeration cabinets.

Schaefer Rubber Co.,
40 E. 4th St., Cincinnati, Ohio.
Rubber stoppers and belts, crutch tips.

Schlieman Companies, New York, N. Y.
Compressor oils.

Schmandt Foundry Co.,
Donovan Bldg., Detroit, Mich.
Brass and aluminum castings.

Schmidgall & Son, Fred
3089 Colerain Ave., Cincinnati, Ohio.
Door fasteners.

Scovill Mfg. Co.,
99 Mill St., Waterbury, Conn.
Hinges, brass and steel caps and machine screws, fractional horsepower motors and sheet metal stampings.

Seiberling Rubber Co., Akron, Ohio.
Rubber belts and stoppers.

Service Recorder Co.,
Hanna Bldg., Cleveland, Ohio.
Trade name.....Servis Recorder
Time recorder for refrigeration motors.

Service Steel Co.,
1435 Franklin St., Detroit, Mich.
Steel tubing.

Shakeproof Lockwasher Co.,
2503 N. Keeler Ave., Chicago, Ill.
Lock washers.

Sherman Mfg. Co., Battle Creek, Mich.
Soldering lugs for electric wiring.

Sherwin-Williams Co.,
601 Canal Rd., Cleveland, Ohio.
Paints and varnishes.

Silverice, Inc.,
280 Broadway, New York, N. Y.
Trade name.....Silverice
Metal balls used in place of ice cubes in cooling beverages.

Sinclair Refining Co.,
2540 W. 22nd St., Chicago, Ill.
Refrigerating machine oils.

S. K. F. Industries, Inc.,
40 E. 34th St., Chicago, Ill.
Trade name.....S. K. F.
Ball and roller bearings.

Smillie Co., C. M.,
502 E. Larned St., Detroit, Mich.
Adapters and bearings.

Solar-Sturges Mfg. Co., Melrose Park, Ill.
Trade name.....Ultra-Weld
Welded ice cream cans.

Solid Carbonic Co., Ltd.
100 W. 42nd St., New York, N. Y.
Trade name.....Carbonice
Carbon dioxide ice.

Solvay Sales Corp.,
40 Rector St., New York, N. Y.
Trade name.....Solvay
Calcium chloride.

Sparklets, Inc.,
19 W. 44th St., New York, N. Y.
Trade name.....Sparklets
Syphons for the preparation of carbonated water and for making ice cream.

Spear Stove & Heating Co., James
1823 Market St., Philadelphia, Pa.
Mercury control and Ripipe fittings for one pipe ice water systems.

Spencer Smith Machine Co., Howell, Mich.
Pistons, piston pins and piston pin set screws.

Square D. Co., 6060 Rivard St., Detroit, Mich.
Trade name.....Square D
Safety switches and controls.

Standard Oil Co. (Indiana),
910 S. Michigan Ave., Chicago, Ill.
Trade name.....Superla, Stanolind, Standard
Refrigerating machine oils, lubricating oils and greases.

Standard Thermometer, Inc.,
66 Shirley St., Roxbury, Mass.
Indicating and dial thermometers.

Stark Pump Co.,
17128 Mt. Elliot Ave., Detroit, Mich.
Circulating water and brine pumps.

States Co., Hartford, Conn.,
Time switches.

Steel or Bronze Piston Ring Corp.,
546 S. Meridian St., Indianapolis, Ind.
Trade name.....Garsix
Steel and bronze piston rings.

Strom Bearing Co.,
4535 Palmer St., Chicago, Ill.
Ball bearings.

Sun Oil Co.,
1608 Walnut St., Philadelphia, Pa.
Trade name.....Sunisco, Sun Circo
Compressor oils.

Superior Machine & Eng. Co.,
1930 Ferry Park, Detroit, Mich.
Connecting rods.

Superior Seal & Stamp Co.,
1401 Vermont Ave., Detroit, Mich.
Trade name .....Superior
Metal floats and screens.

Superior Sheet Steel Co., Canton, Ohio.
Metal sheets for cabinets.

T

Tagliabue Mfg. Co., C. J.,
18 33rd. St., Brooklyn, N. Y.
Trade name.....Tag
Portable temperature time-operation recorders, portable recording thermometers, pressure gages, pocket and laboratory thermometers.

Taylor Instrument Co.,
95 Ames St., Rochester, N. Y.
Recording instruments, thermometers.

Thermwool Products Co.,
360 Furman St., Brooklyn, N. Y.
Trade name.....Thermwool
Insulation.

Time-O-Stat Controls Co., Elkhart, Ind.
Room temperature instruments, brine tank or coil temperature regulators, high pressure cutouts, magnetic valves and surface switches.

Tri-Clover Machine Co.,
P. O. Box 745, Hub Sta., Kenosha, Wis.
Trade name.....Tri-Clover
Hardware and pumps.

Trumbull Electric Mfg. Co.,
Woodford Ave., Plainville, Conn.
Safety switches, panel boards, terminal lugs and porcelain wiring devices.

Trumbull Vanderpoel Electric Mfg. Co.,
Bantam, Conn.
Safety switches.

Trupar Mfg. Co.,
140 Davis Ave., Dayton, Ohio.
Trade name.....Trupar
Cooling units and domestic and commercial compressors.

Truscon Laboratories,
Caniff & Grand Trunk R. R., Detroit, Mich.
Lacquers and paints.

Trutulife Wax Products,
27 Erie St., Milwaukee, Wis.
Wax reproductions for display purposes.

Tuttle's Tite-On Cement Co.,
4507 Ravenswood Ave., Chicago, Ill.
Colored porcelain cement for repairing chipped enamel surfaces.

U

Udylite Process Co.,
3220 Bellevue Ave., Detroit, Mich.
Cadmium plating.

Union Fibre Sales Co., Winona, Minn.
Rockwool blanket composed of Rock Wool Fibres. Rolls of standard widths 24" and 36". Fibrofelt insulating board. Lith insulating board, standard slabs 18"x48". Linofelt quilted insulation.

Union Bag and Fibre Corp.,
Woolworth Bldg., New York, N. Y.
Insulation.

United Cork Companies,
Grand Ave., Lyndhurst, N. J.
Trade name.....Crescent
Corkboard, cork pipe covering for cold lines, cork brick, granulated cork.

Union Steel Wire Co., Battle Creek, Mich.
Wire shelves.

United Tube & Die Co.,
324 Ann St., Hartford, Conn.
Tube bends.

United Wire & Supply Corp.,
1497 Elmwood Ave., Providence, R. I.
Tubing and silver solder in strip and wire forms.

U. S. Rubber Co.,
1790 Broadway, New York, N. Y.
Rubber belts and stoppers, rubber tips for compressor base legs, and insulated wire.

U. S. Gauge Co.,
44 Beaver St., New York, N. Y.
Ammonia pressure gauges.

U. S. Mineral Wool Co.,
280 Madison Ave., New York, N. Y.
Trade name.....Mineral Wool
Insulation.

V

Vellumoid Co., 54 Rockdale, Worcester, Mass.
Trade name.....Vellumoid
Sheet packing and gaskets.

Victor Products Corp.,
Frederick Road, Hagerstown, Md.
Trade name.....Victor
Steel refrigerator shelving for use in large commercial coolers. Steel wire shelving. Standard refrigerator fronts. Hardware, fasteners and hinges. Door gaskets.

Virginia Smelting Co., West Norfolk, Va.
Trade name.....Esotoo
Sulphur dioxide.

Vogt Machine Co., Henry
10th & Ormsby St., Louisville, Ky.
Forged steel valves and fittings.

W

Wadsworth Electric Mfg. Co.,
20-34 W. 11th St., Covington, Ky.
Safety switches.

Wagner Electric Corp.,
6400 Plymouth Ave., St. Louis, Mo.
Repulsion-induction motors, squirrel cage motors rubber mounted motors and ball bearing motors.

Water Filter & Cooler Co.,
148 Chambers St., New York, N. Y.
Purifiers for filtering drinking water.

Wells & Co., A. H.,
563 Watertown Ave., Waterbury, Conn.
Copper tubing.

Western Automatic Machine Screw Co.,
Elyria, Ohio.
Screws, machined taper pins, studs, set screws and nuts.

Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pa.
Trade name.....Westinghouse
Motors and safety switches.

Wicander & Co., Inc.,
271 Madison Ave., New York, N. Y.
Trade name.....Polar
Corkboard insulation.

Wilder Metal Co., Niles, Mich.
Trade name.....Wilder
Metal sheets for brine tanks, cooling units, inside linings, parts and steel tampings.

Wilmington Fibre Specialty Co.,
Wilmington, Dela.
Trade name.....
.....Wilmington Fibre, Fybreroid, Ohmoid
Vulcanized fibre in sheets, rods and tubes. Fybreroid, Insulating paper. Laminated Bakelite material.

Winters & Crampton Mfg. Co., Grandville, Mich.
Cabinet hardware.

Wiremold Co.,
410 Asylum St., Hartford, Conn.
Trade name.....Wiremold, Wireduct
Conduit, loom, fittings and switch boxes.

Wirfs Corporation,
135 S. 17th St., St. Louis, Mo.
Trade name.....Airtite
Door gaskets.

Wolverine Porcelain Enameling Co.,
3350 Scotten Ave., Detroit, Mich.
Porcelain enamel steel sheets.

Wolverine Tube Co.,
1411 Central Ave., Detroit, Mich.
Trade name.....Wolverine
Seamless copper tubing, coils and bends.

Wood Conversion Co.,
360 N. Michigan Ave., Chicago, Ill.
Balsam-Wool flexible insulation and sealed slabs. Nu-wood insulating material.

Worthington Pump & Machinery Corp.,
2 Park Ave., New York, N. Y.
Pumps. Also make condensing apparatus and

X

X. L. Refrigerating Co.,
1834 W. 59th St., Chicago, Ill.
Trade name.....X L, Hilger
Hilger evaporators and air coolers. Also make complete commercial refrigeration systems.

Y

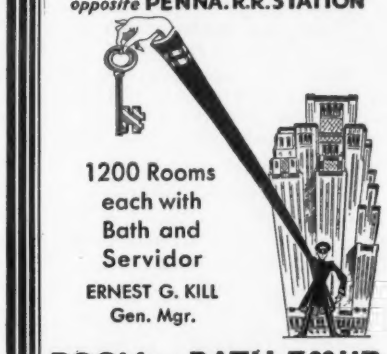
Young Industries, L. A.,
9200 Russell St., Detroit, Mich.
Wire shelving.

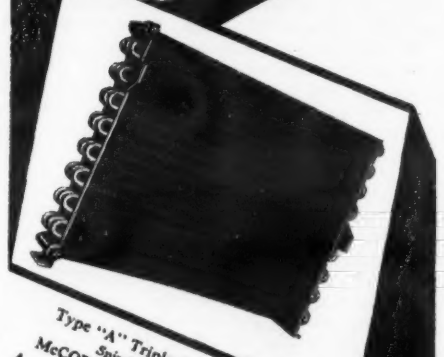
Z

Zapon Co., Stamford, Conn.
Lacquer and metal finishes.

Zinc Products, Inc.,
420 Lexington Ave., New York, N. Y.
Zinc accessories.

Refrigerator Door Insulation
"PNEU-DOR SEAL"
gasket provides 100% efficiency
WRITE FOR SAMPLES
P. L. RIDER CO.
Worcester, Mass.

WELCOME to NEW YORK and
The HOTEL GOVERNOR CLINTON
31ST ST. AND 7TH AVE.
opposite PENNA. R.R. STATION

1200 Rooms each with Bath and Servidor
ERNEST G. KILL
Gen. Mgr.
ROOM AND BATH-3.00 UP

McCORD BUILT Condensers

Type "A" Triple Row Spiral Fin McCORD CONDENSER
A compact, efficient commercial unit with a capacity of 1500 lbs. of ice per day using a 1½ h. p motor

Type "C" Spiral Fin Coil McCORD CONDENSER with Seamless Headers
Popular condenser used in household refrigerators. Great radiative capacity with a minimum of tubing are its features.

Type "B" Continuous Coil McCORD CONDENSER
McCord condensers are made in many sizes and shapes to meet the requirements of a wide variety of electric refrigerators.
McCORD RADIATOR & Mfg. Co DETROIT MICH.